

```

gggccgatac gacgaggaaa atatgaagag tacggtagtg ccccttcgta cggcatcatg      60
ctggcggtag ctgcgggggtt agccgagagc aggggattag gcggatttat atcgccaatc      120
acttcggcga ccatgccata tacccegttg tcgtgcctca tttattcgtc cgatgaccga      180
agctgttcgg tgcggtccac gaacggcgtg ctcatagaag caccttatac tgatattact      240
aagacgatat tgcacggata ggagcttcat tgggtataga ctatgccgag acttgagttg      300
ctacaagggg ggggtgtttt cattgtggcg tttgggtgta ccttgtagag cgcaaggagg      360
cttttgacag atgcccgga ttcccgatg ccccgagtac gaagggttag tatacttcat      420
tcggcacgaa agttatcagg ccgatgaaga aaatagggtt ggctatccga tacgcatggc      480
tatatcgacg aaaagtaccg ggata                                     505

```

(2) INFORMATION FOR SEQ ID NO:615

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 529 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...529

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:615

```

gcatcagtag tatgagcgaa aggtattgat ttcagtgttt ttcaggttgt agctccgtcg      60
ggaatcgaac ccgaatctat ggtttaggaa accactatct atccattgaa ctacagagcc      120
gaaagaacaa gaccgacctt gatcggtttg tctcttttta tttcggggac aaagataggg      180
aataaaccaa cttaatttgt tccttttctt tcttgagcaa gcgttcggcc gcttcagatg      240
ttgctttctgt cgatagtatt cctgactata accggggaaa tcaggcatgg cactaaaccg      300
tatccatttg tcttgaatcg gccactctcc tctttcttgc gatgccatcc atgtacttta      360
ccatcagata ttccccaaga cgcttccaac ggcagttgct ttctctgcct cttcgttgct      420
gtaatttgct aggaatgcta cgctttggcc ggatccagag cgtatagctc ttgtgcttgc      480
ttgtcgatag cggaagtatg cggtcacaag ctccttcgag ttcacgctg                                     529

```

(2) INFORMATION FOR SEQ ID NO:616

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 459 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...459

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:616

```

cactgtttttt ggcattgctg atgggatcat ggatgtcgat aggttcgtgc agatattgta      60
gtcaccgcac  aggatcaagt tagggcgact cttgcggatt cattgacata agattggaag      120
tgctccagcc  aaaccatctt gaaggccgac gctcatcgcc actcgtcccg gatggatgat      180
aaacgcttac  gatagaagat cgccgaaatc ggcacggata aaacgacctt ccgcacgtga      240
ttcttcatac  ccattgccata ttctatatga tcaggctgat gctttgtgat gataccacac      300
cgctatatcc  tttcttttga gcccgaaaaa aagatacgag ccgtagccca gtgcttcaaa      360
tccttcattt  ttccaattgg tcattctgca tctagtttcc tgcaggcaca agcacatcag      420
gattctcttc  tcgaagccaa cgatcagatc ttttcttca      459

```

(2) INFORMATION FOR SEQ ID NO:617

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 735 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...735

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:617

```

ggcaactata tgatcgattt gttgttagct aatgtttgta agcaaaatac acccgcccttc      60
cttatgaaat agctcgtttg gcagaagata ttgcaggagt ttgatggtaa ccatgcccttc      120
tcaacaagac ttccgccatc cggaatggc ccgacgtgaa agaaatatct tgcagggtgca      180
acaggcaaat cgacagaaac cgtatgcgtg ttctgcgttt gatagagaat atcacgctgg      240
gaacactgcc gtcggttatc gaaccgagtc tatgcacgga gccggatctc ctcagctcag      300
agaatcatga tcgctcgtea gggagatctt gagggcaaga aaagcttgca cggggcgattg      360
ctcatatcga cgaatcactc gataagtaat cgctctcctt cacttatctg tttgatgtat      420
ttagaagacg gattataacg caccgtgaaa ccggatacaa tgacagaaga aatagtcgaa      480
ctcgtactgc cgagcggatc agtccgctac tgcgcagtea cgggggacgac ttatctttac      540
tcaaatacaag gataagaccg tttttgtgcg gttttccgga gcatgccgtt ctgtccggca      600
gcacatgaga cagtagaaaa aatcggttaa gccatgaacg cgaatacttc aaagatgaca      660
acatcgatgt cattcttgaa aatagtttag cgatgatctg ttagaacaag ccaagaatat      720
tttgagaaaa cccaa      735

```

(2) INFORMATION FOR SEQ ID NO:618

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 556 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...556

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:618

gttccaaaat	tttcctgtta	tgcgttccta	aaaacgtggc	tcgagaaaat	ttcgtttttg	60
ttcgggaaga	aaataattct	cgcgccaaag	cgaaaaaaag	tcgcgcgtgt	tttccggaaa	120
acgtggcccg	gaattttoga	tgattccgtt	cgtaaaagag	gaagtgtcaa	aattcagttt	180
agagtaaagg	atactacatt	tgtataggaa	aaccgctacc	aaatggacaa	aatcatccta	240
cttgaagcgg	tttttccctt	atgattaagg	tggcatttgt	gtctttttga	tagtggaaaa	300
tccttttttc	ggattttgac	acagccccct	tgtatatccg	aggacgaaga	aacccgtact	360
ctttagtgg	tcttcatcag	gcgttccaga	cgagcagttg	atagtcgtag	aacgagcggg	420
cggcagcgtt	gcccgtggcc	tgcgattgcg	atagatggtc	tgcacgcgct	tgagttgttg	480
cagtaggagg	tgcaatcact	tcattcgggg	cctgcttgga	gaaggccgta	agacggaaga	540
ggaatcggct	ccgtcc					556

(2) INFORMATION FOR SEQ ID NO:619

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 628 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...628

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:619

gtgaatagac	tcacgattgt	cctcggcata	agcatagcca	gagcaaaacg	agaaagctga	60
ccagtagatt	gacgccacaa	ctgtagcgat	aggcgcactc	accggtcccg	gatttttagc	120
cccgtagtgt	aaacctacga	tcggctgatc	ccctgagcca	caccgatgat	aatcatgaaa	180
aagagcatgg	catagcattg	ataatcccga	atgctccgat	ggccaagtcg	gtagcatctg	240
ctgtccgccg	taggatacga	aagaacgatt	catgatgata	ttgaccagac	tgccgtaagg	300
tgcattggcg	aggggtgctac	ccctatagcc	gttatgccgc	cgacaccggc	agggacaggg	360
ggaaagccga	gcggtggaaa	cgtaacgatac	tgccttacgg	aaaaagtgcg	aaaggacgta	420
gaccgaacat	actatcatgg	aacgacagtc	gctatggcgg	ctccgcttat	ccccatcccc	480
aacggataga	gaagatgtag	tccagcacca	cgttcgtcat	agccccgatg	atcatcgtat	540
catggctttg	cgcggatagc	ccgaaagctc	tcattgatagc	attgtagcga	agcttcagag	600
ctgagaaaat	attggcagga	ccacgtat				628

(2) INFORMATION FOR SEQ ID NO:620

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 660 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...660

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:620

```

caagaagatg gcctcgccaa ggcttatatg accgtgnaga aaggatccgt atgcgtcaat      60
ggcgtgaagc cttgaccgta tgcgacttcc ggcatgaaaa cttccgtgtg gctatcatcc      120
cctatactcg cgaccatacg aacttctccg cattgtctcg ggtagtgtgg tcaatctgga      180
attcgacatt gtgggggaata tctcagcaag atgctccaat accaatgaac ccgaacgact      240
tttacccttg atcgaacagc gacagagcga tcgcaagttc gatcccgacc gcccgtagcc      300
gaagacgtgc ttcagcgcat catcgaagcg gggcgtctct cccctcagcc tgcaattcgc      360
agccttggag ctttgtcgtc gtcaccgata ccacactcgc agacaactgg ctgaagcctc      420
atcgtcacgg ttattgggta taatcaacttc acgcgtcagg ctcccgtaga catcgtatta      480
gtogaagaga agccaacttc acggcgacca tcgggggggaa aatgaaaaaa atccactatc      540
caatatcgac ctcggcatag ccgccgcaca catcacgctg gcagccacgc cgaaggtctc      600
ggcagctgca tcataggctg ggtaaacgaa gccaagaccg cgaaatactg ggcattccct
660

```

(2) INFORMATION FOR SEQ ID NO:621

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 611 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...611

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:621

```

tacttatgtg catggtatcc tggacaatcc ggccgtaata gactatctgt ttcaccgtat      60

```


gcagacaaaa	tggaagagcg	gaaaagcttt	cgactatgcc	ggctataagg	atgagcaata	120
cgataaattg	gccgaccatc	tgagacgtat	gccgatgtcc	cgctgattta	ccaactgatg	180
aaagacgatg	attaaagaca	cggagatgac	ctctaccgtc	acggccccc	tcgggcaa	240
ttcagtcgaa	tggtttataac	gccaccgagc	gtcagggatt	gctggatcac	cttccaggag	300
attggatagc	atcggttcct	atccggagcc	ggagccttat	tcttgagaa	aggtttgcc	360
gattatcacg	gtatagctgc	cgattcaatc	aggtagaccag	cggtgccacc	gaagctattt	420
atctcatagc	gcaggctttc	ctggatcttc	ttcagccgta	gtagttccca	ctttcagcga	480
atatgccgat	cttgccggct	gcattggccat	cgtgtggatt	ttatttccaa	gcccgaagag	540
cttcttctcg	atatgatatg	gtctggctct	gtaatccgaa	caatccgagg	gacgtgtttg	600
gaagacaagc	g					611

(2) INFORMATION FOR SEQ ID NO:622

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1372 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1372

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:622

tgcttcttcg	agacagtccg	aatgagtcgg	atccacaccg	aaatcattgt	gaatatgagc	60
gtattcttcg	tgatgtcgtc	cacgtcgtt	cgttcgtgtc	gctggtagga	gtggcgaaag	120
caccgttctc	gtcgcgatag	acaggcagcc	ttcgatattc	aattcgccac	gtccgattcc	180
gacaaaaggt	tcgtctcata	tcccacgccc	aatacaatgt	cggagcctac	cttatcacgg	240
tcgaaacccc	gatagagtac	cctgtacgaa	gagataaaag	gttgccctatg	tccacaaagc	300
attgatataa	taaaagcccc	atccgcgtac	tacacgtcgg	gacactgctc	ggcagacggc	360
ctgtagcggg	taggatcctt	gccggtacgt	tttagcagct	gcgtgtggct	gctatggcag	420
ggatttcttt	gatggccggg	agtcgcaagt	ctgtatcagc	cgatcaagcc	tctccgttca	480
tctcatctat	agagtggatg	gcgaccggcc	tgctgcaact	ttggccgtac	cactcctacc	540
gaaaagccgg	acaatgatgc	agaataggta	cgtcaaagct	gatcccgggc	atcgtctcct	600
tcgtatcgta	ttcgatctcc	aaatcaaaat	caatgtctcg	agaccttctt	catcctcgtc	660
gtcttctatc	gatgccggaa	caaatctcct	cctcatccca	tgtaagactg	gtcaaatcaa	720
gagcttggcg	tactagctgt	ccggtcgtg	aagggtctcc	ttgctgagtt	ctttccacaa	780
gtatctttag	ctcttccagt	ccctgttggt	ccacggcaga	aatgaaaact	acgggcaagc	840
ctgtcggcag	ctcctcccca	agcatctcgc	acagctcttt	cgcgatgagg	tcgcacttgg	900
ttatggccag	cactttgcgc	ttttgtgcca	atcttcgttg	tatgccacca	gtccccgact	960
gagtatctcg	tattccttgg	aatgttgtcc	gtatcggccg	gaatcatgaa	gaggagcaaa	1020
gcgttctctc	gatgtgcgcg	aggaaacgca	gtcccagtcg	tttccccgat	gaagcccctc	1080
gatgatgccc	gggatgtccg	ccattacaaa	ggatcgcttg	tctcgatggc	tacgataccg	1140
agattaggtt	ccagcgtagt	gaacggatag	ttggcgtctt	cggttttgca	gcagttagca	1200
ctgatagcag	tgtcgatttg	ccggcttggg	aaatccgacc	agaccgacat	cggccagcat	1260
cttgagctgc	atgacaccat	acgctcctgt	gccggctcgc	cgggctgagc	atatcggggg	1320
gccgattggt	agcggctctt	aagaacgtat	tgccgtgtcc	gcctcggcct	cc	1372

(2) INFORMATION FOR SEQ ID NO:623

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 511 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...511

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:623

```

ggctcctcct gccacagca tcacaatccc atagcggccg ggctgatcgg catagcttgg      60
tcggcaggat agggataacc atgacggaa acggctatat gagtgtattc ttccattgag      120
gagactgctg cataccacgt atatagtgcc aaagcagctg tccgtataga agacgctatt      180
gagatacggg tcaggagatg ctgagaaggg acatcgaatg gttcatggct ggaaagtgtg      240
aggaactgta gaagtaaggt ttcttttctt totccaatcg cgcacaatcg tccataggcg      300
tgggaaactg atatgatccg gcgtacccca tttgctcaac ctcttttgaa cggaaagctg      360
ctaactcgcg ttacctcgtc atatccagtg cctataggta gctacggaca tttgtaaagt      420
cagcatctcc tccgtacagg tgtgggtgct atagcccgcg ggtgcgcaat gaagcagcta      480
tgcccggcag ttgcgcacct tattggggta t                                     511

```

(2) INFORMATION FOR SEQ ID NO:624

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 739 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...739

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:624

```

tgctcttcat gaaagcattg ccgtagtoga agaagtaaga tccgcgtgca ccagagcttt      60
caccacttcg aaatgacgtt taagtccgag atcgacctac ggcagaattc gtcgcgatcc      120
tctttgagca ggcgtgtacg ctctcgaag agagtgtcac cggacagtag ccgccttcat      180
atacggcatg gcaactgtct gatcggaaag gagatcgata tgaataacctt cgctcaaagc      240
atattgagca ggtctactac attgccatga taggcaatag aacaagggtc gccctcttcc      300
gggcacgcgc agccatacgg aaagcctctt ctttcgactc ggtcggaact tgacccatcc      360
ctgtccgtga cgggtatcga tacggctact gtcacttcgg ccgttatgct gacggctcct      420

```

gcaatatcgg	cagccttgg	gtgcaccgc	tcataccgcc	gagaccgctg	gtgacgaata	480
gtttgccggc	aaattgcctc	ccgtggggat	attcaatttc	ttgacgaccg	gcattgagcg	540
ggatttggaa	cgtaccggtg	taccgatacc	ttgcggnccg	atatacatca	gccaccggca	600
gtcatctgtc	cataattggc	cacacccatc	tgggcaggat	ctnccaatcc	ttgatatggc	660
atacaagccg	accatcatgg	aagttgtgat	gatcacgcgc	ggagcatcag	gcttggactt	720
gaagagtccc	aaggagacc					739

(2) INFORMATION FOR SEQ ID NO:625

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 480 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...480

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:625

ttgcagtgat	gggtccgagc	ggagctgtag	aagtaatttt	tgccaaagag	tggcagcagc	60
cgagaatcct	caacaagcag	cattggaaaa	ggaagaagat	atcgtcaggc	ttttgccaat	120
ccgtacaatg	cagcctctta	cggctacttg	atgatgtgat	cgagcctcgc	aataactcgtt	180
tccgcattat	togtgccttg	aacagcttcg	tacgaaaaag	caaactattc	cggctaagaa	240
acacgcaatg	tgccctctta	ataagaggag	tttagtgcac	cgaccatgaa	tattgcaggt	300
ttagccatat	ccttctgact	ttgtttgtca	tagcctccgg	acactctttg	cccagcaggc	360
agcacagctt	cgcttgaatg	aagtgatgac	ccgaatgtgc	gngactatca	ggacagctat	420
ggcaatcata	agccgtggat	taaaatatac	aatcctccan	ccgctacggt	ggatatcaaa	480

(2) INFORMATION FOR SEQ ID NO:626

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 444 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...444

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:626

ctggaattgg	ttttactgag	gaaaataaga	attcttttga	tacatacaga	gtggcttcaa	60
aatgtcaaaa	ggaggtaaag	gcttcggtcg	atztatgtcc	taaaataactt	ttatcatgtc	120
tcaattgaaa	gtatcttcta	tgaagaggca	aatataaaca	acgtagtttt	acatttggtc	180
acgcagatga	gataatgaaa	atgagcaaat	tgtagatatt	gaatccgact	ctgacctgca	240
tacagtacag	ttttacatct	ttcttccatt	aagtcttttg	atttagataa	agggttgaag	300
ttattgccag	aaaactcgtg	gagcgtttac	ttgtattctt	tgtcctggag	gggaatatac	360
tccaaagatt	acgattaaag	aagagaatgg	ctcaattcaa	tagtattgaa	taactatatt	420
ggagacaatt	ctgatattca	aaaa				444

(2) INFORMATION FOR SEQ ID NO:627

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 436 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...436

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:627

ggtgtcgagt	gcaggctctc	cgccactgaa	cgagatataa	agatccacag	cgatatctgc	60
ccgttggcat	cgtagtaaat	ggagtccgtg	gattttotac	cccattggct	tttatgtcac	120
gagcgatata	gcggttggtc	tcatcgagat	aaagttagta	tctgcagact	ggtttgtgga	180
gacggtcgct	gtaagagcca	ctcggcattg	tccttctgcg	cacgattttg	agtcgggaga	240
gagtaactcc	ttcggcaata	tcttctttcg	aaaaagggtt	gtaagaagaa	ttgtcttggt	300
ttggcccacg	gctgcaaaga	aagcaccgaa	gacaatcaaa	gaataatggt	tgtttttttc	360
atttcaataa	tganttatnt	ggattgtatg	actaagacgg	attcgacaat	cgacccaatc	420
tctcttggtg	aatttt					436

(2) INFORMATION FOR SEQ ID NO:628

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 456 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...456

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:628

tgcaaaaata	tcctttaccg	gctaaaactc	agataaaatg	tgtttttcat	gcaaggatat	60
gcgccactga	cctgtcgaaa	agagcgtgac	aactactcaa	attgaacgta	agcataatca	120
ttcgggtgcg	tgcccgactg	atagactggg	atagatcaac	ttataatcat	ccaaaagatc	180
aggacgctcg	tgtgtgtaac	atcgggaaaa	ccaaagctaa	agcgcagttc	ggggcacaat	240
ttgaaaaagg	caggtaaaaa	tcgcatccga	gaccgatctg	caccccgtaa	tcgtcgcttt	300
ggtataaatc	tccaaccctt	tcctttcgcc	cagctccata	gtcagtaagg	cccgcgatg	360
aggtattgga	cgcataattg	gttcaagcgc	cgggaaccata	ttttcaataa	ttagcggaaa	420
ttccaaatat	ttggatccga	acggagaaaa	gaaggc			456

(2) INFORMATION FOR SEQ ID NO:629

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 545 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...545

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:629

gcgcataattg	aaacctgtaa	taactttcca	tgccaagacg	acagatgaat	ttatgaaagg	60
ctcagactttt	tcgattggac	gaccgttatc	tcacggaca	aactttctcc	attgattccg	120
tcgtttattc	cgattcggtc	aagaacatca	gtatataagt	tatcgtagca	aagatgcttt	180
ggtggatttc	ttcagtatcg	tgaggggcaa	cgtccctctg	tccggctctc	caatcccgat	240
atthttctgaa	catacatgtg	tcgcacgagg	aagtaaccct	gtcgtctgat	agttggggcg	300
tagtctgcac	aagcgaggct	atcgtgtggc	cgaacgcact	gctctctaaa	tgagggtgtg	360
gctgccggta	tcttgctcaa	agcccgggtg	ggcggtagta	cggatttgat	ccgatactat	420
gtgtggatcc	cggaaaccgt	ctgatcgaa	ctgccctgat	tgcatgcaa	tattgcttcc	480
ggtatctata	gcgaggcttt	gcttttcagc	ggtgggccgg	atttcgaatc	ttcgatctaa	540
tgatg						545

(2) INFORMATION FOR SEQ ID NO:630

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 583 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...583

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:630

gtgagaacgt	ctttagacca	aaccaccgga	tagttgctgc	taccgcccga	acttcagcca	60
ttaccagcc	caaagatatt	acatcgtcog	cagtagctct	gtagatagag	caaaggctac	120
gggtgtacgg	atctcatcag	ggctgtccta	ttgaactgta	ctgtaatcgt	actatgttca	180
taagaattca	gatctggaca	aagctgttgg	ggacgatact	gagcttgcc	tcgttattat	240
ctacctgact	acgacattgt	tgggtctgt	cgtatttact	ttaatgctat	tgactatcct	300
ccctgtgcat	gccgtaccgg	ctcccactgt	tgggtgcctg	tgcacgataa	agtaggggtga	360
tggtgttgat	tccttgtgac	aactgattag	gtccaatgag	aaactctcgg	gatgctctcc	420
gtatccgtac	caagagatat	tatagatgaa	agttttcacc	tctatgactt	ctncgtcagc	480
cttggttcaa	ctgtatccga	ggccaagatt	tgattgctct	tcaacctgta	ttataatatg	540
aaatacccta	cgttcaaata	cggattcact	tttatactcg	gct		583

(2) INFORMATION FOR SEQ ID NO:631

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 464 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...464

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:631

agggatatat	atttgcagct	gtaacttttt	ttttcgacag	aaccaattaa	aagagatcgg	60
agcgcgagat	ggtaagaaat	ccggaagaag	tactcgaaaag	acctacagca	tggctgcaag	120
caaatatgcc	aagacatggg	atcagatttt	tggttgggca	tcatggccgg	agcatacatt	180
gotatcggag	gcttttgtcc	ctgttggtcg	gtaaagggtt	tcccagagatg	gccgaagcca	240
atccgggttg	gccaaactgc	tgagtggggc	gatgttcccc	gtcggcttga	ttctgtggtg	300
ctcaccggag	ccgagttatt	caccagcaat	aatgccgtac	tgatcctgcc	gctatcaaaa	360
gtcgattcc	gcgtctcttc	ccactcaagc	tcggatgggtg	gtctatgtgg	ccaactttat	420
cgggtgctttc	ctttttacct	attccttgtc	catttggccg	gctt		464

(2) INFORMATION FOR SEQ ID NO:632

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 392 base pairs

(B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

- (ii) MOLECULE TYPE: DNA (genomic)
 (iii) HYPOTHETICAL: NO
 (iv) ANTI-SENSE: UNKNOWN
 (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
 (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...392

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:632

ggtcgcagaa ataactaata ccacacctct tacgcagata atgaaggtaa aggagtgagc	60
tcttcccata cgggcaattt gggtcttacg atactgccaa agacggttgc tactgtgaga	120
tcaaattccc tatggtcacg ttaaacctct tccttcgaat tactggatcg gaggaactgt	180
aggtaagcct aacgaaggaa agagccgaac aactggacca atgaccaagt tcccgatgcg	240
gcagagatgt tgaattcgcc actgagggtga ataacccgac tgatccgaat aatcgaagtc	300
gggtcctgcn aaggagaacc tgcattctgga cgatntacac nagatggcac agncggtcgc	360
gttatcgcca accttgatca atgactcttg ac	392

(2) INFORMATION FOR SEQ ID NO:633

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 474 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular
 (ii) MOLECULE TYPE: DNA (genomic)
 (iii) HYPOTHETICAL: NO
 (iv) ANTI-SENSE: UNKNOWN
 (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
 (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...474

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:633

ggcttgctg tggtatgagtt cgggactgaa ccacatacgg ctctcttttt cgtggacagt	60
gtgcggtggt caaggaaaatg cagaaaaggca ggtatttctc cttcaccctt tgcaggaaat	120
ccgtgtcgtc cctctctatc ctccctattt tcttacccaa tagcgcgtct cccctgcgtc	180
gatgatgacg ggcagggttc gttgttggag catagtacaa acttggcaaa gaacgaaatc	240
tgtcctgtc cttatcctcc gcctccacct ttagtagaaag ggtggtgctg aggtcttgag	300
ccgctcgctg tctccctgc ggtcgagaag cacctngtcc acgggatgag cagtttccca	360
gcctagtcct agttgaactg acttcgaaag tctcgttggt gttgaagggt acattgctgc	420
ccaagagggc tttgaggaaa gttgagaaat tgtgctnttg cccgtgttgc gctn	474

(2) INFORMATION FOR SEQ ID NO:634

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 643 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...643

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:634

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ggctttcttc tccgtaaaat tgcttttcaa agcgactaca gtttggttaa attcaccocg      60
acactgcgaa attgtccgta caaagttgtc agtttttgta gtaatcgagc aacgaacgat      120
ccacttttat cactcgaaag gtctcataaa gacccttgcc ttgatgaaag cggctctatt      180
ttgaagcccc gattgccgaa tagcgtagg aaacgagcaa attctgtgtc cgtaaatacga      240
accatcaaca atggtcggct cgttcattct tgggaggctg cccacattt ctcttgatc      300
tactttggat tttaatgggt tgtaattctc tcttctggaa ataaacgtgc taaacacaat      360
tgaaatccat tagagagcgt tcacgataaa atgccaatca agacaacgaa aacttctatc      420
caagaacacc gacttcggag gggtctgccc tctgcaagag caaggggttt gagttaccga      480
aataatttcg gtaacgcaag acataccttg ctatttgac tgacgcaaat aaattcggtc      540
gaagaacgat atgttattct ctcgaaatgt atgttttcaa agccttgaat accgacttat      600
cgtttactgc aaagttacta agcgttgggc ctaaactcct acc                               643

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(2) INFORMATION FOR SEQ ID NO:635

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 476 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...476

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:635

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ggctgcgaat agcttgtaaa tacgattgat ctcaacacct gcagctttta ctcatthaaa      60
tactggacgg ggttttcata cttcttaaat gcattggtag tgatacctgt gtcaatcgga      120
ctgttttcaa atctgtggca ttcataatgg acgtgcagat aactgactg taaaatgacc      180
ggctttttct gtgctattgt cctgcttttc ttacttgaca tagctatttg ggcaaaaact      240

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tcacgttttt	cttattaata	aaatactggt	ataaatctat	atcaggaata	cgagtgcagc	300
agatttcaat	tgtaacgact	cttttaccat	cttgatcatg	ttatgacctc	tttgacatac	360
tggttggcag	cgttaccttc	caaatatagt	tcatcaagtc	tttcaagagt	gcttttagtg	420
aaatttcgga	caaaatgctt	atgatgaatc	tttttgtaga	gttgcgattc	taataa	476

(2) INFORMATION FOR SEQ ID NO:636

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1019 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1019

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:636

aaggatcggc	agccgggttcg	acggtagctt	actgtttggg	natccggatt	cgatccgac	60
aagtaccatt	tgcttttcga	gcgttttctc	aatccggacg	tatctccatg	cccgatatag	120
acgtcgactt	cgatgatgac	gggcgtgcga	aatactccgc	tgggtgacgg	aaaaatacgg	180
caaggagaga	gtggccacat	catcacctac	ggtacgatgg	ccacaaagag	ttctattaag	240
gatgtgctcg	cgtacagagg	ctgcccttac	tcgaaagcaa	tcgttttagcc	aagccgacca	300
gacaaaattc	ccggagagaa	gaaagtcaat	ctgaagaaag	caacgaattt	gttccagagc	360
tgaagcaagc	atcgctaagc	tccgataagg	tatgcgcgat	accctgaaat	acgcccacat	420
gctggagggg	aatgtgcgca	aacaggtgtg	catgcctgcg	gtatcatcat	tgggaaaacg	480
gatatcagcg	tgtcgttccg	gtcagtagcg	ctcccacaaa	agacacgaag	gaggagctgt	540
ggtcacacaa	tacgaaggct	ctgtcatcga	acagacggga	ctgatcaaat	ggacttcctc	600
gggctgaaaa	cgctctcgat	catcaaagaa	gctttggcaa	cataaagcgg	cgccatggca	660
ttgacttgaa	tatagacacg	atcccttcga	cgatcctctt	acatataagc	tatacagcga	720
tggacgtacc	ataggacttt	ccaattcgaa	tcgggtggga	tgcaaaaagta	tcttagggag	780
ctacgccctc	tgcttttcgag	gacttgatag	cgatgaatgc	tctctatcgt	cccgtcccga	840
tggactatat	cccttctttt	atcgcacgca	agcatgggcg	tggcctatcg	attacgacct	900
gcctgagatg	gaagaatatc	tcaaagaaac	tatggtgtga	cgggtgatca	aggagcaagt	960
catgcttctg	agtcgcaagc	tgccggtttt	acccgaggcc	agagccgatg	aacttcgta	1019

(2) INFORMATION FOR SEQ ID NO:637

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 458 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...458

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:637

tggatgatac	ggctcgcatg	tactccaagc	cgcagttgga	gatctatgcg	atgatgtgaa	60
gtgttcgcat	ggtatgacta	cggggcagct	ggacgacgcg	ctctcttcta	tctgcgtcag	120
cgcggcattc	ctctggctga	agccaagcta	tgcttagcgt	ggcctttacc	gatgatgtag	180
tcaagctggt	tcatatgagc	agcttcgtga	acgtctgcgc	gacattatcg	aacatcggtt	240
ccgcgaggct	gcatgcggtg	tggctcctgc	aatatctgct	actaaaaata	ttttgtctcg	300
tcctacaaaa	gctttacagc	tattaggaca	agaaaagatt	ggntcttata	catcagcaag	360
gaccgtcctt	gctgatggat	ttgtttttcc	ggggagagtc	gagctacgct	ctacaagctc	420
ttcgagttac	gctgtaccgg	gtagctcatc	atcctnta			458

(2) INFORMATION FOR SEQ ID NO:638

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 521 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...521

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:638

ggcgtaaaaa	tcgttataga	accacttacc	acttcaatga	caatacggaa	aggcattccc	60
cctgatacga	tcatatacgg	tggaacatgg	catggctttt	ttgacctctc	tgcggctatg	120
gggggagagg	ctgaaacccg	acaatggtgc	gtagcgggct	gatgcatacc	gatcatatac	180
attatacggg	gggtgggtata	cccgtcatgg	aggactgggtg	gccgatgcct	tactcggttc	240
tattgccgtg	gcaaaaatgga	taggagcgcac	cagtccaaac	tctaaaataa	aagaagtcca	300
agatcgtgca	ctttttcgat	tcgatggata	tatcccgcct	gtggatatac	tacagtatga	360
tgcttctgcc	cccatgattt	tttcgagtgg	gagttcttca	tcctctttct	tttgttcctt	420
ccgctatcat	cctgctacgc	cgcaaaccgg	actgcgtatt	gtatacgtat	ctctcttttc	480
tcctttatttc	actataagaa	gcagcgggtct	tttcgtctgc	t		521

(2) INFORMATION FOR SEQ ID NO:639

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 596 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...596

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:639

ggcgagtcgc	caccgactgg	tggcgtttga	tattgcttgc	attgacagct	tctgaatgct	60
tgctgtctca	gcagcctgag	tgaaaccgcc	cgcatoctta	cggagaggaa	cagcttccac	120
gcttcctctc	caatggagtt	ggtcagctct	cgatataata	agatccggcc	gaagggtcga	180
taaccttgtc	gaagtgcatt	cctctttgag	caaaagctgc	tggttgcgag	cgatacgett	240
cggagagtca	tcgctctgct	gataggtgac	atcgaaaggc	aatacggtta	tggatccact	300
ccggctatcg	ctgcagacat	ggtttcggtc	tgtgtgcgca	ggagtttacg	tgtgcacatga	360
aaacggctct	gttccacatg	gacgtcgtag	cagctgggtg	atcttggccg	tttcggttct	420
gtactgatcg	ccatacgagc	cacgatctga	gcccacagcc	agcgagcggc	acggaacttg	480
gctatctcca	gaagtagtgt	gatcctatac	cgaagttgaa	cttgatacgt	gaagcgattc	540
ctcngcttg	tagccggcat	cggtcagctt	gtccaacagc	tctgcgcccc	agccaa	596

(2) INFORMATION FOR SEQ ID NO:640

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 899 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...899

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:640

gcgctctcga	cggttcttcg	ctgtgatcga	gagcaccgag	agacggtcac	gacactctcg	60
atggcccgc	caatggctcg	cacagtgtct	atgcctcgt	gaagataacg	agtttctgct	120
ctggattacg	ctccagactg	agcagacagg	tagcagctgt	cgcttaaaat	cgtctagttt	180
gggatcgctg	gagtagtgct	ccactgctca	tctagctgg	cgatgagggc	tagatcctga	240
cggagagatc	aatgtattct	ggagcaaagt	cctcacgtcg	atactctcta	tttccccttt	300
ctcattcgat	ccagaggagt	tgagcttggt	gatctttttg	cgtgatcctc	ggcacactct	360
togaaggaga	acaatttct	cgtactatcc	catgcttacg	gggattgagc	tctgcattca	420
catctatctg	tgggcagatg	atatgggtac	gtgctcccac	atatccacca	tattttgggt	480
gtaacgcttg	gatttttgag	cgagaccttg	aaggcggaga	agctactctc	gatgcgttta	540
ccaggccaat	ctgcataatg	cgtgctagct	gatgggagaa	tcgctcggat	ccatgttgcg	600
ccccgagtag	agcttacgcg	tgtctcgtc	tctcaggact	caatagctcg	atatacgtag	660
tagcatagag	aggtagagct	gtcgaatgaa	aattctcttt	cggcgcaatg	cagtccatcg	720
tacgagcgaa	gagttggcaa	ggctcttgct	catacgatac	tcaaagctat	gagggccact	780

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aatccgggaa agtaagttgg tctcaaggta gtacttacgg atgtcggtcg gtggctcttga      840
cgagtatatc tgtaggacgc agtctcttac gcgactagac agcattgagt agttcctac      899

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(2) INFORMATION FOR SEQ ID NO:641

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 588 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...588

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:641

```

ggtgaaagtg atatccagca tgagaatata atcgccaatc tgcttaccgg tatggctata      60
ccaagattat caaatgttat gaatccggga gtaactccaa aaacattatt gatgctttca      120
acggaggaat ctcggtggcc aactataggg ccacggaagc gaaacagctt ggggtacgtc      180
tcacttcggc accactatgt gaagcagctt accaacagca accagctacc gtttattttc      240
gacgtgcttg tgtgaatggc gatttcctgt acaacgtacc atgtttcgca gaagcctgat      300
gcgtgcacaa aaagatggta aaccgacagg tactgttgct atctagcgtc tacgatcaac      360
cagtcttggg cttctcctat gcgcgggcag gagagatgaa cgaaattctg tgcgaaaaac      420
accgaaacaa catcaagcgt atttcggagg tgtcaccatg aacggtatgt ttgctatggg      480
gggaaaagta aaaaaggatg gtgagaagat gctcgacaca tggactgtat tcggcgaccc      540
tcgcttgctc gttcgtacac ttgtcccgac caaatgcag gttacggc      588

```

(2) INFORMATION FOR SEQ ID NO:642

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1212 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1212

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:642

```

ggccaatata gaagagcgcg acaggatcga ctccacacgt gccgtttcac tttgagacag      60
gctgaggatg ctttagtgct ggacaattct catatgacat tccgcagcag aaggcatggt      120
tgctggagcg ttttcaggaa gtgaccgttc atgattccaa tagaaataga cagcggatcg      180
ggattttgct tcgggtgggtg aatgctattc gtnatgcccg agaaagcaaa tttggagaaa      240
aagctcgata agcttttactg cctgggcgat attgtacaca atacgctgga ggtcaacggt      300
taggaaagaa aggattggag acgatcgatt acgatgcttt ttccgactgc gtgggggcaaa      360
ggtactgttg cgtgcccattg gagaacctcc cgaatctatc ggatggcagg agaaaatggg      420
gtaacgatca tagatgccac cgtcctgttg tactccgctt gcaaaacaaa atcaaatac      480
gatacgaagc acgcgcagcc tcggcgacac agtcgtcatc tatggcaaaa gagggcatgg      540
gaagtaaacy gtctggctcg gcngaccgaa agaacggctn tcgtcataag agcgaggagg      600
agctggacaa aatagattac acacgtcctg tcattctttt tcccaaacga ccaagagcct      660
ggaggggatto gggcagatca tcgacacatc agcacacgta tgcagccggg tgtaactttc      720
gagcatcacg atacctctgt cgccaagtgg ccaatcgaaat cccgcataac ggagctttcg      780
ccacgcacac gaactggtgt tcttcgtagc cggagagaaa agctccaacg ggaggtactc      840
ttcgggcatt gtctggcagc caatccgcgc aagtatcttt attcctcccc ggaagtcac      900
gtgccggata tgctggttcc tctgccggcc acataggcat ctgcccagcc acctctacgc      960
cccgatggca gatggaagag tggcatcgca catcaaggct ctattgtaaa ctcggccgcc      1020
accggcaagg gtgcgtatat cctcctttat aatgcacccc ctgatagggt cgattggggc      1080
gatacgcgcc acattgtacg gagcggagtg taccaaataa ggcaggatac attcttggcc      1140
gatccggttc ggtagctgac ccgtgaatcc ggcttcggaa attgcccgac acggggggcc      1200
tcttcaagag ca

```

(2) INFORMATION FOR SEQ ID NO:643

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 482 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...482

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:643

```

agataaannt atatttcgcc ggcaagctat tcttcaacct aaaaagtttt atgacgcagg      60
aatcggaatc ctttttcttc gacaaaattg aagtcaatag gagcaaggag gttctctttt      120
aggtaaaaag actgatgcta cttgctttat aatgtttcat tgcttcggc atatattggc      180
gaatggcagc tatccgttgg catcgctcgg atgcgtactc agaaactcta cccgcccggt      240
accttggcag ccattctttt ccaaaaagta attgccgnat tcgggttata accgccatcg      300
ccatgaagac aagtcctatt ttgtcggctt catactcctg ttctgattgt agggtagccg      360
taataagcac ttgtgatcca atgccatagg ccgcccgatg accgtttgca gtgctgctga      420
cttgggtggag actgctgcgc cagtatatta ccacccattt ggcgtagata ttctgactg      480
at

```

(2) INFORMATION FOR SEQ ID NO:644

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 401 base pairs
- (B) TYPE: nucleic acid

(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...401

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:644

agaccgttcc gattatgaaa gcagctacta ccgtcagccg tataaggatg ttttcatcgt	60
tgttttcggtt tatgcaattt gttcatataa agcctctcat tacagaaaga gcctgtttta	120
gtgagttccc gatagccata atccgtttga ttttgtcgat tatcttatcg gcttcggggt	180
tttccaatgc gaataatatg cctgtaaaagc atcgtaagca gtataattct tccaatcttc	240
tcctatttcc ttgccaatc tctgactttc tcataatcgg gatgatatgc tttgaatcac	300
gcataatcgt gtcggtggca tcttcatcat atccatcgca aaagtatatg tgttcaaata	360
gctggcatgt tgaatgnaag tcgatacacc caccgaata g	401

(2) INFORMATION FOR SEQ ID NO:645

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 408 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...408

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:645

ggtcgaagct cgtagccact gctacatgct tggcctgatt caaatcgcta acggcacttc	60
ttccggaata accaacacag gtaccttgct cgaatctata cttcggctgc aacgcttccg	120
atcagatccg aatccttgcg cgatttgctc ggcgtcccat cacgatcatt acgggtctgt	180
gtcgcttgca gtaactagga ttacatcttc cggagcaccg tccaaaagga cagaggagaa	240
agatattcgg gaagttoctc tcgcgttata ctttcacgca gctctttctt gagctgttca	300
tcagacgttg tacacgctgg tattctttgc gcaggctgac ttcttgctga gctggaacac	360
aagccgtatc gccaccgta agaaggtgtg gaaaaaatgg actgatat	408

(2) INFORMATION FOR SEQ ID NO:646

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 402 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...402

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:646

ctgagtcttg	gagtgggaat	gcttgtcgga	agagaatcgc	ccgacttctt	cccgttttga	60
ggcgatgaac	agcgaactct	cccgctccgat	ctgcgggagg	tttaagaccc	ccttatacac	120
aagggtctct	aataaactgt	gaccggacca	tgagaggagg	agtcgtcctg	acaaaccctc	180
ttgtggatct	ttcttttttc	tatcggttg	aatgggtggca	aaacgcaccg	gctcgacatt	240
caggagtcc	ggcgtcggg	atagctcaag	gtcggtttgc	gctccaaaat	tttctgtttg	300
tgacctctaa	aaacgtggtg	cgtaaactgt	ttcgttttgg	cgtggaagtg	aaaaatttac	360
ncaccacgac	gaaaaaaatc	tcgttccgtt	tttcggaaaa	ca		402

(2) INFORMATION FOR SEQ ID NO:647

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 507 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...507

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:647

atattggatg	tgcccgtgaa	agatgagaaa	gctgcctgct	ggcatgtctt	tccatcatca	60
cggacatgta	tcagcccaat	ccacagcgaa	tgaaggacgg	atctccatcc	ccaaaagcaa	120
cggttatgag	tcgctccacg	ttacggtatg	ggaccgcaga	atcgggtgggt	ggaggtgcag	180
attcgctccc	gtcgcaggac	gaggtggccg	aaagaggatt	ggctgctcac	tggaaagtaca	240
aagggttcaag	agcgagagcg	gattggatga	gttcctcact	tccgtacgcg	agaccttgag	300
gcacgcgata	actcctcgga	cgattcggcg	gagacgggtga	aaacttcaag	atgaacctct	360
tcaccgatga	gatctatgct	ttcactccca	cggagaactg	atcaagttgc	ctcaggggagc	420
ccagtgtgct	ggacttttgc	ttttgcccat	ccattngcgc	atcgggtgtc	aggccgctcgg	480
agcttaatgt	aatggaaaaga	atgtgcc				507

(2) INFORMATION FOR SEQ ID NO:648

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 633 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...633

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:648

tttcctcgtc	aaatcaatgc	ttgtgccgat	aggcgagaaa	taaggaatgt	tgtcggctgt	60
ttcttgctcc	ctgcatgatg	caggacgcga	ttgtcagcga	ttcttgcttc	ctgcacgatg	120
caggacgcga	ttgtcaactg	attcttgctc	ctgcacgatg	caggacgcga	ttgtcaactg	180
attcttgctt	cctgcagatg	caggacgcga	ttgtcaactg	attcttgctt	cctgcacgat	240
gcaggcgcga	ttgtcaactg	attcttgctt	cctgcacgat	gcaggacgcg	attgcggctg	300
ttcttgctt	cctgcacgat	gcaggacgcg	attgtcaact	gattcttgctt	cctgcacgat	360
gcaggacgcg	attgtcaact	gattcttgct	cctgcacgat	gcaggacgcg	attgtcagct	420
gattcttgct	ccctgcacga	tcaggacgcg	attgtcaact	gattcttgct	tcctgcacga	480
tcaggacgcg	attgtcagct	gattcttgct	tcctgcacga	tcaggacgcg	cgattgtcac	540
tgattcttgc	ttcctgcaca	atgcangacg	cgattgtcag	ctgattctgc	ttcctgcaca	600
atgcaggacg	cgattgtcag	cttgattctt	gct			633

(2) INFORMATION FOR SEQ ID NO:649

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 464 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...464

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:649

tagcctccga	ctgcgatgtc	gtaggggagg	aagccatagc	cgtggaatcc	tgccggggat	60
gcgtagtttg	tggcctgcag	ggaagttggt	agcagataac	ccggattggc	tttcatcagt	120

tctctcttcgc	tcaatccata	ttttctgtga	tggagtagag	cgtttcctgt	ggccggataa	180
tgtgttcgct	cggatgagag	cggcggatat	tttgctattg	gcccggaccg	gtttggacgg	240
aatgacagag	tctgcccttc	cttgatccct	tgtctggccg	aagggttgag	cgtaaaatat	300
catcctccga	cagaccgtat	tggcgcgcca	gtccataaac	ggttctttgg	cttgcaactac	360
gtgtactttt	gtcctgctac	gcgtctgacc	ggtgccgata	ctacggacat	cagcacacac	420
gtaatcagca	ggatntaaag	acttttatcc	ggaatacatg	atct		464

(2) INFORMATION FOR SEQ ID NO:650

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 417 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...417

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:650

ggccgtgcta	tccagagatt	gccacggcga	gtgagcgtac	cattgttgac	gttgacagaaa	60
cgttttgctg	agccacaccc	ggtagggcga	tattgatcga	ttgtctatac	cggcatagag	120
tacgttcac	atcgtcggag	caacggagcc	attggttccg	taacgaagta	ttcgctttca	180
aagtacggc	gaatctaacc	ccatcggtac	ccatcatttc	gatatacct	ttgaccggat	240
atgtgccggt	gcacctgccg	tagccgtaaa	taggcccattg	ttntcgggag	aaagagctta	300
ccgtttacaa	atacgtccgg	tctttgcgtg	gtatctacac	tgggaggacg	atattggcct	360
tatatgtatn	gcccgcacatg	acnatttggc	tcgtggaatc	acttgngccg	agatact	417

(2) INFORMATION FOR SEQ ID NO:651

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 705 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...705

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:651

```

agcctgcgag cacaatngtcg ttcacattgg ccaaaggctt gaagtcccaa gcttgctgtc      60
atcgagagcg ggagtataat cgccctggtt gaggaagacc cgtccatctt gtccaagtcg      120
tgttgcagac cgtcgtagtt ctctgaagca taccggggcc gagcgttacc tcaagcatac      180
tgccggtaaa ctctgctcat ctctacgtg cataccgcca gtactttcga aaacctgcac      240
ataagatttt tgccgatcac cttgatcacc tcgctcatca gcttggtgcc attgcatcga      300
tgtagcaaat ttcatttttg gaaaccggcc cgtcgacctc cacgtcacga gggtggacac      360
aatcccctta acaactcctt ttgtagccat tacttgattt atttcttttg atttcttctg      420
aactcgtcca aagactctgc gtctcgtggt tgagagtctt gacgatgcgg cggaaagtct      480
cctctcccg ttttcgtcca acttcaccca acgctcgatg atcgccagct ccaaataatg      540
cagagcaaac gctctacggg gaatacgagg ttgaataacc actcttcggc cactcccaac      600
gaatcacatc aagcagacgt tcgcgttggt aaatgtcgtc ttctcaccga cagaaaagag      660
tgtggacaga tagggcagtt cttcgccaa gtcgaagtgc gagcc      705

```

(2) INFORMATION FOR SEQ ID NO:652

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 518 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...518

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:652

```

gggacggatc tcaaacgcag tgatatgcaa atgaggaaag ttcaatttgc ttcgatggaa      60
acggatcccg tacaaaaacc tatatcccaa aaggatgagc tcggtgcagt tcgagacaac      120
tgagcgaaac gagtcggaac ggcattctgt aatcatcttc gttcgcccgt tgagcggcat      180
gaaagcactt tcggacgtcc gagcggagca cgactgcaaa cgaatggccc gagtagccga      240
gagtacacgc agttggggcg ttccaagtgc cgatcggtg cctctcgcan ggagacgtgt      300
ccaagcattg ctcttggggg tttcccatcc gagtacctac ggaatggat agtcctcata      360
gcccgtaatc gagcattcgc attgcgatag cgagggggta tgctcgtggt cggtcagaat      420
gccgatcttc tctgcccgtc catcagtga cggtcogaac tcatgccatg ggcctgcccg      480
taagcgatac atccgcatat cgtggtaccg gcatacga      518

```

(2) INFORMATION FOR SEQ ID NO:653

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 833 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...833

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:653

```

gccgttcgat aatctccggc gtcagatccg aatatgcata cacaccgggg ccgaaggcgt      60
gcgactgacc tgccgatgta ctattcccat cttcttcaag cgcgcacac agccagagct      120
gccccaccgg atcccaagac gagagctgcg tatgccacgg ctttcggatc agctccaggc      180
tatcggaaca gcctttacat cgggtattata accgacgaga tggggacgac gaaagcgcgc      240
acgtttaccc gaatcgtatt gacggctccg gtcaattccg cttcctcgtc tatcgatcca      300
gatagcgcac cacctccact ttgtacggcg atgtcacgtt gaacctgaa gagagggatg      360
gagcgaaagc agactcttca gttgggagag cgctccagag ggaaaagtgc gtagacggca      420
ttgattccct ccgtcttgaa ttggcgttga agaattcggc agacagcgaa tgagccagtg      480
gatagccgat agaccgtact ttttcatttc agtcccatat aaacgggtgc cacctccaag      540
aaaggctacg ataatacgtc tcccgaatc cgacagagag catcagggtc ccagttcttc      600
ccgttgaggc atggctgcta tcgattcggg aagatagtat aggtctccgc atcctgtgac      660
aggaacgac cgacaaccgg tatcactgcg aagcatagaa gttgtagccc tgcttcagg      720
ggaaactcac cggacggaaa gctccagtat catcagagga gcacctcat tgagcacacg      780
atactttcct ccagaccgag cttgatattc tgaaagttgc gcaagccgaa agc          833

```

(2) INFORMATION FOR SEQ ID NO:654

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1205 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1205

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:654

```

aggtcgttg ggtacgcaaa ggcaggcact atcggtatgg atacaagaac acgtcttgac      60
ggacgagcag ggtttggtag aaacagtggc cagcactgg ctaattgtgc agacacgggt      120
gtattacctg agctgatcaa gaagtccagt tgccgggagg aattagtgtt ttggccgaca      180
aaggctattg cagcaaaaaga attcggagta tttggcccg caaggtttga tagatggaat      240
tatgccaagg ctcatcgagg tcaagtctc aagtgaagt caaaaacaac tcaacggatg      300
atcagtaaga cgcgtgctt gatagaacgt accttcggta gtatcgacga tggttctgtg      360
gcggacgatg tcgctatcga gagttagcca agcacatacc cggaatatcc ttgaagctat      420
ggcctacaat ctcaagcgta tccggggctt cttgtgcttc aaggcgcaaa ataggcgcta      480
aacgaccgtc ctcgagggca attgccctcg aggtcgggga aaggggacta atccccaagt      540
gcaaaacaga cgagaatggt caaaaacaca ccgggaacaa gcgagcagaa gaacagcctc      600
tttgtgaat ggtctcaatt tgaattctga atctctgcaa tatgaattcg tacttgtttt      660
gataattgaa tgtagcaatc atgagcttag atgtacgtta gtggctgaaa tgcgattgcc      720
ctgttacaaa cggaactgata caacatttcc cctacttttg cgtagtttc ctatagtaat      780

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aaacacacta	tgtggctttt	ggagaaaagt	catgtaaaag	taatttgacc	gaagctttgt	840
gggatgtttc	gccgagtgat	tcaagaaggc	atacataaag	cctcagtttg	tgtagcatgc	900
natgattnag	agtatctcan	gggtgcaata	gcggtttgac	gccgacaaac	ctcgtgatcg	960
agtgtgcggg	agtgggttat	atgtgaatgt	ctcgtccacc	acttattctg	cctatcaggg	1020
gaagaaagag	gacttatttg	gattacacaa	ctgatccgag	aagatgccca	tttattgttg	1080
gcttttccac	gaaagaagag	cgtacgctct	tcggccaact	cacatcttca	gcggtgtcgg	1140
gcctacgacg	gcacagctca	tcctatcttc	ctatgccctc	aagagctggc	cgcactcatt	1200
accac						1205

(2) INFORMATION FOR SEQ ID NO:655

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 487 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...487

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:655

gtgccctggt	caagcgcggt	ggcagaagcc	tgaaaagtcg	tagtcgtggg	tagtaatagt	60
atztatccag	cagaccggga	aatacaatcg	agggaaacag	aggttcacgg	ccgtattcat	120
gttgtagcaa	tttatatcga	tcagccgttg	ctgctatttt	cgggacgatt	gccggtctcc	180
cactcatacg	atccacgata	ttccaagaaa	gattttctcc	tcgccgaat	acattgcgcc	240
gagcagagca	aaattcagtc	cgggaccgat	gaagtcattg	cttttgctcg	tgaaaaggtc	300
tctaatagat	catcccaagg	tttgtcgagg	gtggtagca	gtccacatcc	aaaaggccgg	360
aaatggaatc	gcgttgcaaa	aaattgagat	cgtaacggag	aaggctccca	aacgagccaa	420
ggatttgctg	gtcgtctcat	ctctttctgc	cgatacagat	tgccggagaa	agaaacgaaa	480
gcgtttg						487

(2) INFORMATION FOR SEQ ID NO:656

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 559 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature
(B) LOCATION: 1...559

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:656

```

tcgcgcatgca agacgagcag ggcttctatg atttcaagga ggcgattgtg tgcagcctta      60
tcctatgccg catttcacgg ttattgatga tcagacgccca ccctccgtat tgtctctcag      120
gtcgaacagc tgatcgaatg ccttattgcg ttatccatct tatcgatcca agcagataca      180
tttacggttt gtacgtggaa gcatgtttat cgcttcgcaa tacctccacc agcttgata      240
tcagccggtt ttgttccgat agctctttct attcagggtta ttatagggtt tgagagaata      300
aacagacgtc tcgctgcttc gcgatggctc tcttcggggtc tgtagtctct ccctggatac      360
agcctataaa attccgaaac gctttgctgc gacagcatcg agagcgggta tttctccga      420
gtattcgctt gtcttggtca tgcaatacct tttttgaaag tagccagcac cttgtccagc      480
tcattccaaag aggaataatc tcatttttac tgaagagtgc gagcatcttt gacctcatca      540
tcataaaatt cagaagctc

```

(2) INFORMATION FOR SEQ ID NO:657

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 511 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 1...511

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:657

```

tgctcgcaaa caaaaccaac tctattcgac actggagcag aaaggattca ccgcccctcc      60
actacgatgt ggacttatga cgatcatatc cgcgacgaat gaacaaagcc atgagcctac      120
tgccgcaaaa agactacgac tccttcctgc agcatacaaa gagatggcta tcgttctgcg      180
tgacctgatg gaaaaaaaga gcttatecct tatccaacct ctctgaagct catttccgac      240
aaagattcga agaaatgaaa catggcgatc gggaaatagg cttcttcctt atcgcatgcc      300
ggaattagat gcaccggcca agcaatcaaa agaagcccac ggcaatcatt tatggcagaa      360
ctgggagcct tacttgccaa acatggtatg ggacaggcgg acaagacgac caggcgatac      420
tggatgtaag cccgaaggaa acttgacttt tggagccaga tcaatctgct tttccgtcat      480
cttctgtggt tatttcgntc gtggaccgaa a

```

(2) INFORMATION FOR SEQ ID NO:658

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 471 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...471

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:658

agaaattcaa	gaacacagta	aaaaatatca	agagatgaat	tttccaatca	tgaaaaactg	60
attcgtgaaa	agcaaaacga	actgcacatc	aaagacctgg	catggcttcg	atccgagatc	120
tggtagcttt	ggtgaccaat	ctggaaaggc	taccggcact	aaattctgcc	gtatggaaat	180
gggtgtgccc	ggacttctgc	acctcagatc	ggtatagaga	cggagataca	aaagctacgc	240
gaagggtagc	ttcgatttat	cccaatttgg	atggctctgc	cgaactcaag	caggggcac	300
gcgctttgcc	aaactctttg	tcaatatccn	acataccggc	acggcttgcg	tgectacggt	360
aggctcgatg	cagggatgct	tcgtatcttt	cccgtggcca	atcgcacaca	caaaaaccgt	420
gaatacggta	cgtcttttta	tgaccccggy	ttcaaatctg	aacaagctac	a	471

(2) INFORMATION FOR SEQ ID NO:659

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 559 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...559

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:659

gggtcttctt	catagcaggc	aggtagagcc	atttgtcatc	atccttacca	tctgatcata	60
atcccatgtg	aggaaaccgg	tgcccttgac	atcgcccgat	agaggaaaaa	cataatagtc	120
ttcttgtctt	tcttatcctt	acccatgcaa	tggagttaga	aatgagtttg	cgctcacgta	180
cggctcctcg	tttattatga	gcttcatagt	gagttcggag	cgacgcgtat	caccgtcggg	240
gcggttttta	cgcgctgtgc	tatgtcgcgc	cctgtctggg	cgtagatgct	gaaaagacca	300
ttgctaccat	ggctgtcatg	agggtggtct	ttgccaatcg	tttatcgttt	tctgtttttg	360
ttagctgttc	tatatattagt	cttccccatc	ttcaggaagg	caaaaatgta	caggcatatg	420
cctaatacgg	aaccgtgttc	ggagagattg	gtctgccgtc	ttttttgaaa	ccgatacggc	480
aaaatcttct	tcccgaatat	tnggaatcgt	cggaacaggg	agtggcgtga	tgacagaagt	540
gccaaaaggg	ctgtgaaca					559

(2) INFORMATION FOR SEQ ID NO:660

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 826 base pairs

(B) TYPE: nucleic acid

(C) STRANDE S: double
(D) TOPOLOGY: circular

- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
(A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION 1...826

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:660

actgcactga aagactcgcc atacagatct cgtcccgatt ctttgggcca tacaatttcc	60
tggtcatgga gcatcagctc atcgtagtag tcgatcaagc ctcggccgac gcacctccac	120
ccgtatattg ggacatctgc aaaggtgtcc ggcagcatcc gacaggaagt agtagccatg	180
cgtactgtat gtattcccgat atgctccatg gtggttttgg ccggattgta gaacctatgtc	240
accggccccc ggcataagaa atacagcgca ttgcccctga cggagtaccg gtacggaggc	300
aaatcgcttg tcgtgatccg gctcagatct tcgggaagca cctccacca taaccgaaca	360
cacctacctt ggacggatcg gagaagccat tgcacggagc tggtcgtccg taaggcgata	420
cactccaact gcatcgacac gatcttgacc caatgtcccg aagccattag cgaacggctg	480
gccgtcttcc catagctcgt tgcgctttcg caggcaaagc aagggaagg aagagagaag	540
gaatgcgact attggaagta ttcgtttcat ctgagaaata gcttatttat ggatatgtcg	600
agcagttttt gctcttcgag ataggcttcg aggtgctccc gatagcaatg gggcctaccc	660
ctgccggagt cctgttaaag ataagacccc catacgaagt gtgaagaaac gactggcata	720
agcgatcaaa cgatcacgga aaagagcata tcccgtgtat tgccctgctg caccgtgcgt	780
nccgctatat ccaatcgag gcccaattcc tgcacaccgt gcccg	826

(2) INFORMATION FOR SEQ ID NO:661

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 922 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
(A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION 1...922

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:661

atatcatccc gatacgcaac ttatggtgaa tgcggaacgg aattgattcg acacactcca	60
ccatattagg atcttatccc aaaacgaaaa agcctccgct ctccctaaca aggtgagtcg	120
gaggcttttt agtatccgtt agctaagctt acttcagcgt accttgctgt gcttgttcga	180
tcatcttggc attcggaaga tataaacctc cacacggcgg ttggccgaac gtccggcaac	240
tgtgcattgt ctgcaaccgg ttcattggctc ccacgccctt cggctgccat gcgcacatac	300

tcacaccctg	agaattcagg	aaagaatata	cgctggctgc	acgctctcag	acagaggatc	360
gttgatcttg	tcggagccgg	tattgtccgt	atgcctacga	tacgaatata	cgtgtcgggg	420
tttttgttca	tgtttgccgc	aacttcgtca	gcgcagtgcg	tgagttggga	ctcagagtgc	480
tggagttcgt	gcaaagagga	taccgctata	gaaagtaacc	agaatagcct	ctccgtcatt	540
actgtctgaa	tcgtagcaco	gggtactgcg	gcctccagtt	cttttttcgc	ttgtccatct	600
tctttccgat	gagagcaccg	gctgctccac	cgactgcgta	ccgacgatgg	caccgacagc	660
cgtattttccg	gctacgttac	ctactcggca	ccaatggcac	ctcctactcc	ggcgccgata	720
aggccgcctt	ttgcctattg	ttcagtcocg	aaccggcgaa	cacgagagcc	acggggcaaaa	780
ctgagctact	acacttgatt	tcttcattgg	ctcttctttt	ntattcggtt	acaacgatgc	840
tttggttcaca	caaagctata	ccgtggaggg	atcaattata	ttattggcaa	agtacttcat	900
aaactgcata	cgctcgtaca	tc				922

(2) INFORMATION FOR SEQ ID NO:662

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1161 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1161

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:662

ccaagatgag	atcaaaagca	actatgcgga	cacgaaaggc	ggattggaaa	gcagcgaatg	60
atatacgcga	tcatcaagag	gatcatcgac	caaagtatcc	acgcgaagta	atcgacaaga	120
cggactttca	atgggatccc	ctgagcatat	gctctacgac	ccggccggca	ctgctatccg	180
aggtcattgc	gaaccatac	gcgatatgaa	tatttccttg	ccaatttccg	tgcgatgcaa	240
gcacagatgc	atacatgccg	catcagccga	accagatcct	gcgtgcattc	gaggagagat	300
ggagattccg	caagaagacg	tcaaacagct	attcgaaaca	ctgtctcctc	tccacaggta	360
aagaaggttg	ctcaactgat	cagcaaacga	ttggacgccc	gttggagccg	ttcgacatct	420
ggtacaacgg	ctttcgctcg	cgtcgggtat	gccagagagc	gaattggaca	aatcaccgcg	480
agctaaatat	ctacaccga	agcactcaaa	gccgatctgc	cgaacatcct	gcgcaagctg	540
gattcgaaaag	caaagatgcc	gagcggatag	cttcttttgt	gatggtggtc	cttcgcgagg	600
tgccggccat	gctgcaggct	cgatgatgcg	caatgacttg	ctcgccctgcg	cacacgtatc	660
gccgatacgg	ggatggacta	caaaggtaga	atatagccgt	acacgaattc	ggacacaata	720
cggagcaaac	catcagatga	acgatgtgga	ctactacatg	ctcaacgggtg	tgccgaacac	780
atcctcaccg	aagccgtcgc	tttctctctc	cagaagcggg	atctcgaact	cctggtgtca	840
gcaagcccga	tgcacagaag	gagtacaacg	aggctctgac	cacttttgga	attgctacga	900
gatcatgggc	gtatccctcg	tagacatggc	ctttgggaat	ggatgtacac	gcaccttgaa	960
gccgatgcac	acgagctgaa	ctcgcgggtc	tggacgcggc	caaaaccgtt	tggacaacagt	1020
actacgccgc	attctcggag	aaaaggacga	gaccattctg	ggcatctatt	cgcatatgtc	1080
aattatccgc	tctacctgcc	caattatccg	atggggcata	tcacgcgattt	cagatcgaac	1140
agtacatcaa	gggcacaatcc	t				1161

(2) INFORMATION FOR SEQ ID NO:663

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 462 base pairs

(B) TYPE: leic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...462

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:663

gaggggtttcg tatatcatcc caatgagaag aaacgcgac	tgatgcggcg atggaagcgg	60
cactatacag catgcgtccg aaggccgaga aagagttcat	ccgtccatta tcaggaaagc	120
tcgctggact acactcaaat aaatatcgaa acggcttacc	gacaacacac gaagattcaa	180
tgcaatggag aataaaagct gaaagtggcc atttcccatg	gcgacatcaa tggatttggg	240
tatgaattct gcttaagacc ttgcccgaag cctcgatact	ggatctcttc acgctgtcat	300
atacggatcc gccaaagtgg cagcctatta caggaagacc	ttgagttgga tttggaaagt	360
tggaaccaag tatcctcggc aaccggaagc cgtagagggc	agaagtgaat ctggtaaact	420
gcatacccgga agacgccaaa ggggaagatg ggccgtttgc	tc	462

(2) INFORMATION FOR SEQ ID NO:664

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 574 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...574

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:664

ggctcagtc	ggacaggaga	aggccaaaga	gggaggggct	ttcgatcagc	cattgtcaaa	60
gggcgaaagg	ccatccacct	gcacagtatt	cgtaccaacc	ggagcgtaag	caaggttggc	120
agagcgatcc	caaagccgta	gctttccgaa	caaaagagaa	tacaaccgct	ttctgcacaa	180
tgcttgatg	ctcgtggcaa	atcgcagttc	tataatgccg	atttcctgca	ggcgcaggct	240
acatttctta	tatcgcacgc	ttatacagcg	acgaaccgat	aatccgcgat	gaagccgtct	300
ttggcaggta	cgctgctaca	gtgagatggg	gtggctgcat	gaagggagcg	tttgctcgag	360
cgcattcccta	aagatcttcc	gcatgtcgat	cgagagggtt	gtattctttg	gcagtggcag	420
agcgttcgat	cctgtcgggt	gcaagcgcg	ggccatacct	tatctccaac	aggcagcaag	480
acaagagaaa	acaagcgaca	acgcgctcgt	atgtattatc	tgctcggaca	gctttttacag	540
aaaacaatcg	gccggaggag	gctcgcgaag	ccta			574

(2) INFORMATION FOR SEQ ID NO:665

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 654 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...654

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:665

```

gggcagatag tcgttggaacg taccctcgcc gcgtatggca gctatgggac gaggtaatcg      60
cccaaagcat tttccagttt caggcctccg catttgccag aaagatcaca gccttggggg      120
gtatagccca gagcaagtcc atgatggagc cgcattggca ctacccatgc cgaagttgat      180
gagggtgacg ccttcgccga agcattcgcc atggagggtat gttctccgac gatagggtacc      240
ccgtatgctc ggcgaagaca tgcagatagt gcgaaaagtt cgtcagcagg atgtcgggttc      300
gaaatcgatc agctgcctct gcgtatatcg cggttaaccag ttccaactat ctcttgcttc      360
gttttcatga aaacagacct atatttgtaa catcggtcca aaaattctaa gattcggggag      420
cgaagcaaag ataggatgat taactaaacc ttccccctta cgaacatcgt attcaccaag      480
aagatgagtc atgttcattt tcgacagcat tcggcgctgc tatgtggctc tgacgccggg      540
gagtgggtgc gccagcaact tgtccattat ctgaccgatg tactgggcac ccggccgatc      600
tgatccgcaa cgaagcacag ctacgaatag accggcgaga aaacgctgcg atac          654

```

(2) INFORMATION FOR SEQ ID NO:666

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 508 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...508

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:666

```

ggctcttgccg agaaagcggg ggagatgaag ctcgtggatg agctgggttc cgtaccgatg      60

```

tgagaaaga	actcaa	atgtcccaac	gcggagagaa	gatgaacttc	ggttcgtatc	120
gctttctcag	gttctggcca	atggcccatg	aacaaaacga	aaggcagtcg	gatcgccgtt	180
ctctttgccg	aaggtgaata	acggaagaaa	taataataga	angccgttcg	acactgacgg	240
tagctcatca	cacaagaact	cgccaaagaa	atcaaggcag	cagccgatga	cgatatatca	300
aagccgtagt	acttcgtgtc	aattctccgg	gaggtagtgc	tttacttccg	aacagatatg	360
gaagcaggta	gccgatctca	aggccaaaaa	gctatcgtgg	tctccatggg	cgacgtagca	420
gcctcgggcg	gatactacat	acctgcgcag	ccaacagtat	cgtggcagag	catacgactc	480
tgaccggctt	atcggcataat	tcggcatg				508

(2) INFORMATION FOR SEQ ID NO:667

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 566 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...566

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:667

cgtgtctttc	cattcagata	aaatcaaaga	ggcgaaagag	gatttggtg	cttcgagaaa	60
cgagtggaac	gggatgcaga	gggacttcca	atcaacaact	cacaattaag	ggtgtagaag	120
gaagtacgga	catcaagggt	attgctgtcg	cttgccaggag	atcgaggaga	aagcacgcac	180
caagggtgaa	tacaataaat	cggtgagatt	tatggctttt	ccatcatggt	caagacggaa	240
aactctcaaa	gagttgttcg	actgctcctc	caaccgcttt	tcgtgaaagg	gcanagagca	300
tctactatac	ctacaataac	gggaagttgg	cttctgatcc	caacttgctt	gtcagaactt	360
tatcaatgct	ctcgagcgta	ttccaaaggt	gatgaatcac	accgagaaaag	ataaggaaaa	420
ggtttctgca	aacaaggagg	ttatatgacc	attgcggttg	ggtcgtggaa	gaaagaggac	480
gagcttcgct	tctcaaagga	caggcagccc	gaactgggat	agaaaaattg	cactcacgcc	540
gcacctcccc	gaggaagaga	aagaaa				566

(2) INFORMATION FOR SEQ ID NO:668

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1212 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1212

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:668

```

tcagaagaga attttatcta tctctatttg caaaagaaaa agccaacatt atagaagaag      60
aaaatttgat attttggact aaaggatttg ttgcaggcta aataaagact ttataagtgc      120
atctcatatc ctaatgccat atttagacat gcgttgcgta atattgctga aatcaagaaa      180
ggaaacataa ctacttagag aaaaaacgac aagaggctcc ttcttttaggt gtaattttcc      240
ctatgttcaa ggtgtaattg aagaagaaat actgtatgaa atagaatcct ttctaatacat      300
gggatagatg tcaatttttag gaataattta tctcatggac ttcaaccctt tttgaaattg      360
aaaaatatgg gatatttttg tggaggatat gctaaaacta tattttgaag aaaagaatat      420
gataaaaatc gctccctaaa ttataaaaaga gataaagaat tactagcctt acggcctctg      480
cgaggctttt aaaaccagat gaaagtgaat aactttgcat tttggcatca aaattcttgt      540
gaatccaccc taagtgtgca aaatatctct gtaatcttat ccttgggtatc atatgggtgtg      600
taattcgtta tttttcaaga ccaaaacaca caaagtaccc tgtaattccc aacttctata      660
agacttttct tatcctgaac tcacgtattc tttaatgcga agcaaaaagt gtccgaaaga      720
aattttgttt ccgtaataaa agattcctgc aaagctgcat agtcgttctt ccaatccttt      780
atacttctac aggaggataa aactctattt ttccggataa tctttatcac agtagcatag      840
agaaccggac ttacaagacc gaaaagcgta tatactccga atcatcgaca gaaatacaaa      900
aacaagtcgt cattttccac cgataagaac gcattttaca aagaacaggg acgagcctgc      960
cattttgccg gggacgacgt tcgttccggg taggacgacc ctccgtctgt tttaggtcga      1020
cctgactttt gtcagggctg gcgtgtgtgg tttattgtct cgtaatgtgc aggtaaagaga      1080
gggttaagag tcgatatttc gggaacggat aatctttccg gatttcgcct cggnatgcgt      1140
tccgatatat aatctcccng gggatggcat gacnggcaac agtcttctga aaaccgcac      1200
atctctgcgc tt                                     1212

```

(2) INFORMATION FOR SEQ ID NO:669

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 477 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...477

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:669

```

ggccgaactc gtagaaaacc ccctctatct gggttgtctc attgtaaagg tggagatgcc      60
gatggactga ttgccggcgc acagaatact accggcgagt acttcgtccg gctcttcaag      120
tcatcaagac agctccgggc atgactacgt gagcgggtact ttcttactct tcaccaaaagc      180
caaagaatat ggcaaaacgg acttttgctt gttgcagact gtgctgttat acccaatccg      240
acagcgatga gttggcacag atcgctgtcg ctacggctcg tacggcgaaa gccatgccga      300
tattgaaccg cgtgtagcta tgttgagctt ctctacgaaa ggctgcaaa acatgaaatg      360
acagataagg tcgtagaagc tactcgtatg gccaaagaaat ggctcctgat ttgntgatcg      420
atggcgaaaat gcaagcccga tcagcttttg tagaaaagat ggcagcactc aaagctc      477

```

(2) INFORMATION FOR SEQ ID NO:670

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 544 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...544

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:670

```

gatcgcagga tcagattatc cccgtgaagt tgagtgattt aagacggata caaaagagtt      60
tatcgccaac cccacgaatc gtgccgatct tcccgagagg aaaagcgcga ggtagtaggg      120
cttggtacca tggaactggt tacttctctt atgctatttc gatcaaaaat cagatcgaga      180
ccagctatca gatgtaatca gtgtacaaaa tgaactcatt gctgcatata acgaagtttg      240
ggacgatttg ctcaaaagta tttccacaaa ccatacaagg agcttactcc ttccagcaga      300
aggctgtttt agaagcatat ccgntgcaca ttccagaaat gccttgtcta atctcaagta      360
aagaataagg aacaaaatgg gaaagtttaa taatccggcg ggcgtgaaat gcccgaaactc      420
aatacctcgt ctttgcttga ctggtttttg cgttcctctt ctttatcatg atggtaacga      480
caattcgtga gtgacgccca aggtgtcgtg taataacctn cctaaagcga ctgaattgac      540
aagc

```

(2) INFORMATION FOR SEQ ID NO:671

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 850 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...850

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:671

```

gcaaaaaact gcagagaaag ttaggcccta tctccatagc cactccggag ctctcttgaa      60
tgcgcatgaa atgctgagag acaagatgca ctacttcacg agcagacgca atgcagtgtg      120
ggtattttta ttcacgtggt attcaagatg cgggtaagggt cttgctcctg atggagaatg      180
aaggtgacga agaactctcg cttatgctcg ttcgttggct cgcaacaatg gcagtgtgct      240

```

cgatgactac	ccgagaccga	tggtttaccg	ccgactctat	ccatgggaga	aaacgactga	300
aagccggatt	gccatcgaca	atcaatatca	gcagctacca	cttatgctcg	tcagctaccg	360
ctattgggtg	cgctttgccg	gtgagtgtcc	gatgtgatcg	agcacttgcc	ctctaccatc	420
attatccatc	atcgaaatga	cgctcttcga	cattgaaagc	tgcaatgata	tgagaataat	480
cgaacaagat	cttggtcgcg	cccatatgaa	tcagtaatag	aaagcagact	gaagtatgcc	540
gcaaacgaga	gacggatttg	accggaggaa	gatccggagg	attgagcgct	tcgccaatgg	600
acatctctat	tacggctctc	atcaggacgg	ggattcgggg	tgattcgtga	gttcgcgccc	660
gaagccacgg	ccgtatatct	gatcgggaac	tttcgcgctg	gcgtagattg	cacagtttctg	720
gtttgcgcct	gtggagaagc	gggttcatgg	gaattgcgac	tttcatgccg	actgcttccg	780
catgctctcg	ctacaggctc	ttcttcgaat	ggcccgggtg	cgaaggagag	aggtaccggc	840
ttggtgcaac						850

(2) INFORMATION FOR SEQ ID NO:672

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 358 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...358

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:672

gccagttcgt	tttccaactg	attgcgcact	tcatttgctt	tccgctgact	tcgtaaactg	60
ttttgcgtaa	ctcttcctcg	ctttcacggt	gacaggtcga	caggtgcggt	ccatgtgtgc	120
caaaggactc	gtgatgtgat	gatcactaac	ttcactcctc	cttcgcttat	gtatggcata	180
tggcaatcgg	cgcacgcaca	cctcgctggg	catggattcc	gtgttgagag	atctcgaagt	240
ccggagctgt	gctttcacaa	tgggggcgcg	gctcagggtg	tgaatataat	cgtatactca	300
gcttcacgt	aatatcgttc	tgcatcctcc	attgtcattc	cttatcccat	gggaaagt	358

(2) INFORMATION FOR SEQ ID NO:673

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 608 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature
(B) LOCATION 1...608

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:673

gggcaaaaaa	cggatctttc	tctacaaca	tcttcgtata	acaagtatac	tgaaagctga	60
tgttatctac	tgaacacttc	ctcctctttg	cttctatttc	ctatttgcag	gtattatggc	120
cggaaagggtg	ggctatcggt	tgggtatcct	acccttttga	tctttctctt	caccgggatg	180
ctcttcggag	tggatgattc	ggttttcagt	tttctaaatg	cccgatgtgg	gcacaagtcg	240
gtaggatcat	cgctctctcc	attattctct	tcaccgggtg	tatggatacg	cggacagaaa	300
ggtgcgtccg	gtcattgccc	agggacttac	gctgtctact	ttggtgtctt	gctgacagct	360
cttctatccg	ggttctttat	cttttggtg	agggttcgga	ctttggccct	tacccgttcg	420
ctctttctac	ctctttgctg	cggctgccac	gatggccagt	acnccgactcg	gcttcgggtat	480
tcgccatcct	cgttcgcaaa	agatgcagct	caaagagaat	ctggctcccc	acactggagt	540
ggagagcggt	agtaacgacc	cccatggcgt	atatgctgac	catcgacca	tcgatttcat	600
caccaccg						608

(2) INFORMATION FOR SEQ ID NO:674

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 475 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...475

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:674

gagctgggtct	tcgatacggg	catccagcgc	aacatcaaac	taagcgaggc	cccagccacg	60
gtattccggc	actgctctac	gatgccgata	gccgcggacg	gtcaatcata	tcgagctggc	120
ggccgagctg	atcaaaaagc	acaaacaaaa	ggagcctgac	tctcatatga	agcatacgaa	180
gaaaacgctc	ggtcgtgcct	ggactccctc	ctcgatgcgg	aggatcatagg	gtcttcttcc	240
atcaggaagt	ggccatcagc	gatataatcc	ccaatcccga	tcaaccgcgc	cggatttcga	300
ggaggagtc	ctgaaagaac	tggccgcttc	gctccgttcg	atagattggt	acagcccac	360
acactactga	agaagtccgn	cggcgactat	atatcatctn	cggagaacgc	cgcttggcgt	420
gcggcccga	tggccgggtat	gccaccctgn	cggcatacat	caagacggaa	gagga	475

(2) INFORMATION FOR SEQ ID NO:675

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 729 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...729

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:675

cgaagaagat	ctgcaagccg	gcgaggacta	ccaatatgcc	gtggagggcg	caggctcgtc	60
atggaacggc	agcggcagga	ttcgctctac	agggggatca	ggtgcggcag	atggaggaga	120
gcctccataa	tatgcgtgcg	aatctgggat	ggtgcgcgcc	cgtgtggaag	acctgaacgt	180
gaaggcaccg	gocgacgtca	gttggggcgt	ttggacgtgg	agatagggca	gacggtagga	240
gccggagtcg	catcggaacg	atcaacgtcc	tgtccgacta	caaggtggag	gctagataga	300
cgagcactat	atcgatcggg	tcaaagccgg	tctggccgct	tcgtcgaacg	gcagggcagg	360
gactttctccc	ttcgcggttcg	gaaggtatac	ccgaagttcg	ggacaagcag	ttccgcaccg	420
acttcatatt	cgacggagag	caccgcgaca	tatccgcaca	ggccaaactt	actacatcaa	480
tctgcgcctc	gacagccgtc	cgaagccatc	atgatcccg	gcggagccct	ctatcagaaa	540
ccggcggaacg	atggatatcc	gtcggttacg	ccgacggcaa	gcgagccgtc	gccgggacat	600
cacgattgcc	cgtcagaatc	cgcagtatta	cgaagttcct	ccggcctgca	ttgccgncga	660
gatggtcatc	acctttcgta	tgatattccg	cgatgcataa	gaaattatcc	tgaatgaccc	720
acctatagc						729

(2) INFORMATION FOR SEQ ID NO:676

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 561 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...561

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:676

gcgtcgggca	tttatcaaac	ggcttctaaa	aacacagact	gatatggcgc	ggcagtagcc	60
gatagcagta	ttttttgaga	aagcgaccgg	aaagggaaga	actttttggc	cgcttttccg	120
ttttataag	caagtagaac	aagaataact	caaacgaaac	aagatgaaaa	agaacatttg	180
ctcgaaagcc	attctctggc	ttctctgctc	ctcctctcag	tcgggacaat	gactgcatcc	240
tgtactccaa	gaatgacact	cgtcaagaag	aaaccgtctc	tgccgatagc	aaggagagaa	300
agatggcaaa	atcatccata	tcacggctga	atacatgcgc	gaaacatata	tgattacaca	360
gccaatcccc	aagaatgggt	ctataaaggt	gaaagcctgc	tattatcgac	ttctatgccg	420
actggtgtgg	cccggtccgc	acctttcgcc	caaattggaa	gaggtggcca	agaaatatgc	480
cggtaaactc	ccgtctacaa	agtcgatgtg	gacaaagaaa	aagagttggc	agggattttg	540
gngtcagaag	tattccgatg	g				561

(2) INFORMATION FOR SEQ ID NO:677

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 453 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...453
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:677

```

gctgtcggaagggtgcaataaaaacgaaagaaagatgaagaaaaaaagcttttctctctc      60
tccctctgcttcgcctccctgggtccgactccatggaggaaggtttcggcacagcagggttg      120
ccgccgcgga tccatccctttgtcccccacggaagccatc cggttggcac gaaagcagag      180
cgtggatgca gccgtgcaactgcaagagcttcgagcggcct actggcagtg gcgcacctat      240
cgggcgaatt gctgcccgga gtgaacttga cagccacact gccggactac aggctgccta      300
ttcgctctat cagcagccgg acggctctta cagcttcgtc cgcccaatgc tctgcgcctg      360
tcaggacata tatccgtgga tcagaatata tgcttacggg tggcaagctc tctttggtga      420
gttcgctcga gcatatcaat cgctcggnac gga                                     453

```

(2) INFORMATION FOR SEQ ID NO:678

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 405 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...405
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:678

```

cgacacaaac tcattagtgt ggtatagccg ccatagctcc acccccatag ccgatacgag      60
ctgcatccac atagggcagc tgtoctatag cagtggccct gctatctgat catcgctttc      120
gaatacaccc agttgcatgt aggtacattg cgccattctt cgccgcgagc accggtgccca      180
cgcccatcca cacatgcacg acgtaacctt tcgatgcaag gtagtggtcc caatcgaatg      240
aataggatcc aatacctgct gggagttggg accgctatac tgtaccatca ggacggatag      300
tggcnagagg gatngaaatc aataggcttc acgatccang catcagttca agacccgatt      360

```

gagttttgat agtggtaaac tccttcgggt tgnacgatag ggctt

405

(2) INFORMATION FOR SEQ ID NO:679

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 878 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...878

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:679

gccgtgtaag cgcaataggg tcaagcgttt ggtcagggag gcttatcggt caacaaacac	60
ctcctgaacg atgtcctcca agagagacag atctatgcac tattgcattt atggtagtat	120
cggatgaact tcctgacttt cgtacagggg gagagcgatg caaaagagtc tgatongaat	180
tgccggaaat gtacctcatc ggctttgaaa aacgagtana tacgatgcga ctgatcaagg	240
ctttttcgtg caactcttac tgctcccat tttcttctac aagcggttta tatcccgctt	300
acaccgcctt catgccggtt taccctctca tgctcgctct atgcacgaa gccttacgta	360
aatatggccc gggcaaagga ctattgctga gctcaagcgt attctccgct gtcaccctg	420
gggtggaagt ggctatgacc cgttccgtaa gaagttttct tcacttaatt cctcttatat	480
ggtatttctc acattcatac tcattctgca gctcgcaacg atagcgagat cattcgagtc	540
ggaatctacg accgaatgaa accatatctc cgaatacttt ttgctccacg gcattcatcc	600
gtggagtgtg ccagagaatt atagcgaga gttgcttctg tccgtgaagg attgaatcac	660
gacgaggttg ttgctctggg agaatggggc tggataaggt gtgcagtaca ccgtatgaaa	720
agcaacgaaa agcttcctcg atcaaattga tctgagcgaa gagtttggca tgccggtgct	780
actgacatag tacgagcatg ggatgatctt ttggcgatca aaaacaggta aagcttcaca	840
gcccgtagat cgttcatggt ttcggagtag tgaaaaac	878

(2) INFORMATION FOR SEQ ID NO:680

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 500 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:680

```
gattttttctg aaaccactag tagatttttc tgaaactaat atcagattca cgtactgaaa      60
aattaagtct tatcaaagca cacttggtac ggctttgacg ctctactttt cattccacga      120
gcgattaacg caactottct tcgatcaacg gaactcggta cgacgggtca gttgggtcgca      180
gactgactgc tgctcccggt caaagggtgt acgaattcct cggtgagcac atcgcccttc      240
ttcagaaatc gtgccgttcg gcaatttttg ctgtcaccgt cttggggaca gactaccgta      300
gcctttccac gtaagcctgt cggccgctat gccacgactc gtgggtaatc caccacggat      360
ttggctctgc ggtcagatag tccgaggttg tagcatcggg gcctttcctg tcggcatgcg      420
aacccaatc gatccgaata tccgattgtc cgtgaggata cgaaatcagt tcgtccaagc      480
tcttcattgct ttcggggcgaa                                         500
```

(2) INFORMATION FOR SEQ ID NO:681

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 570 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...570

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:681

```
agaagataaa gacttcggcc catgccaaag aattggcaga gaagtttgca agaaagaagn      60
ccgtcagccg cgtatcatga tcgccaaaat ggggcaggcg ggcatgaccg tggtgccaaa      120
gtggtcgcta ccggctatgc cgactcgcat tcgacgtcga tatggggcct ctgttcctaaa      180
caccggaaga agccgccgtc aagctgtgga aaacgacgtc cacgtgatgg gcgtttcctc      240
tctggagccg gtcacaagac gctgatccct caggtaatag cagagctgga gaagtcggcc      300
gtccggatat tctggtgaca gccggagggt ttataccggc gcagattacg acttcctcta      360
tcaggccggt gtcgctgcca tcttcggccc cgtacccccg tggcctactc ggcagccaaa      420
gtgcttgaga ttcttttgga aaataatctc tactctcgat aaggagtatt tcagcattct      480
ctgtatggcc ctcatntgat tcttccaaag ggantcctat gantggettt tttatgttca      540
agtcttant gtcnnaaag tttctttctg                                         570
```

(2) INFORMATION FOR SEQ ID NO:682

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 453 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...453

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:682

ccgatgccgc	tacctccggt	tttggtcgta	tagaaaggaa	caaacatatg	tcgaacacct	60
cttgaggaat	aggagtgcc	ttgttctcca	catgaagggt	agtctgtgtt	catccaacga	120
atcgagacgt	tctcgacac	gaatacgaaa	agtcgtttct	ccgtatcggc	aggatatcc	180
gcctcggcag	cattttgacg	aggtttatca	gtaccgaagt	caattgccgg	cggtcggccg	240
ggacatcagc	tccacgggta	tttcttcaat	atccaccttt	atatcgttgg	aggaagaagc	300
tcttcttgca	ggcgcaatat	ccccgaaaga	aaagcatgta	aagaatgtcc	tccttctcgg	360
gaggaggaac	tgccgtaaac	ttacggtagt	ccgtacaaag	gataacagcc	ccactccggt	420
actacgaatg	gtatccaatc	cgtagacagc	atc			453

(2) INFORMATION FOR SEQ ID NO:683

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 579 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...579

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:683

ggcggccttc	taccaaatag	cacaggcttt	cagagggagc	cgaagcctct	agccattcct	60
tcttttgccg	aatatgagga	tgcttgctcg	atgtacgaca	cgaagtctgc	ttctatcctt	120
ctaatagagga	cataggcgag	gctgattttc	caatatggat	ttctgctggc	tttgtaaccc	180
gaacaatccc	gatggcgact	gctgcagcgg	acagagatcc	tgcgctctgct	caacgatcat	240
cctgaacgac	attcgctctc	gaccagtcct	atgtatcgtt	tacgaccgag	gaaggattcg	300
tccggccgac	atcaaaggac	ggaaaaacct	tgctcatggtc	tatctttcag	tcatgcctat	360
gggataccgg	ggcttcgcat	cggctatata	gtgccaataa	agattttatg	aagcgtgtgg	420
cggctttcag	tacgccgtgg	gggtaaacgc	actggctata	gaggctgcca	aattcatcct	480
tatccatcct	nacaattcac	tctgccgata	ccgcaagtgg	gcaacgcaat	acggtagatt	540
tatcacagcc	cttgaatcgc	cttcgatggt	gtagaagta			579

(2) INFORMATION FOR SEQ ID NO:684

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 475 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...475

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:684

gggcatggng aagtctgcat attcttcagg aaagccttct ttcggtgttg agccggtaac	60
gttcagggtga tcgtggatag caacatcgat ttcgaagcgc tgcagaaaaa atcatcaccg	120
gtcgtgcttt cgacaacggt atcatctctc aggcgaacag agcatcatct acaacgaggc	180
tgacaaggaa gcagtttcac agcattccgc aaccacggtg catattttctg tgacgaagcc	240
gaagggatcg ggctcgtgca gctatcttcg aaaatggagc catcgcgaaa gatgagtagg	300
tcagagcggt gccttcattg ccaagaaagc aaacatcaat atcccaggag taccggtatt	360
ctcgttggtg aagctcgcgg cgtangagca gagacgttat ctgtaaggaa aagatgtgtc	420
ccgtaatgtg cgccctcagc tcaagcactt cgaagaangt gtagaaatcg gcacg	475

(2) INFORMATION FOR SEQ ID NO:685

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 568 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...568

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:685

ggccaaatta cttccagtt catccggacg gggactgatt tggctaagtc ctcccctacc	60
gacgatgaaa tcgacctgct gaccaaggcc ctccgacggc cggttctttc agcgtggagc	120
ctgtattgga tgtccgctcag gactgggggc cgagttttat tcgaatggaa aaggcgagct	180
ttacttcggt ggatggctcg ttctgatact aacagggtggg gagcctatct gggcaatcga	240
cttgcaccca aaccgatttg gttgccgaac tgacccaaac ggtcgggggca caagacatga	300
agaggctatt gcatctgtga aagattatct acgagaacgc ttccctcact gtacaccggc	360
tatatcggag tagacatggc agtatatgcc gaagagacag tctgtttctg catccttgta	420
tcgagatcaa tgtacgatac aaatgggggt ggcagctatc ctgctttacg acctttggat	480
agagaaaggt gaagaggtgt gttcgaagtt aagggttttc gaaccgaagg cgaancacag	540
aatgggattc aatgatgcag tgcagcca	568

(2) INFORMATION FOR SEQ ID NO:686

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1372 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1372

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:686

```

ggaaaaataat acaaagtact ctcatattgg taattcacaa tggcaaaaaa tatctaagca      60
cactgaaaagt atcggccgga ctattctccg ccatcttggt gtcttattgg ccagcggact      120
tctggccaat gcacagacag ttagcacgag acgaaagatc aaggtctgca gatgagcctc      180
ttgatctctt ctccctttaca gaagcgggat acactcgcta cggtcatgtc gcattcagga      240
ttctcatccc gtacaaggga cggatattgc ttacaattat ggcatgttcg attaaacgaa      300
cctaattttca tgcttcgatt tgtacgaggc gaaacggatt attccgttga agctctttat      360
acatcctatt atgtggaaga ataccttcgg agggaagagg aatcgtggaa ttagtattga      420
atctcacaca ggaagagatc gaaaagctga gaggtatttg gcatggaata ttcgccccga      480
gaataaacga accgctataa tatcttttat gacaactgtg ctaccgcctt tatcgagata      540
taaaagaaac cacaggagct accttgcaaa tccctcatga gggtgaggga gaaagtggag      600
acagctgata gatgaatgct gtaccgatgc cccttggtca agttcggcat cgatctggct      660
ctcggggcga aaacagatac ctatgcaatc cggaggagca gttattcctg ccgaatagaa      720
tgttggtatc gctacacgta ccaacttact ctatcccaat ggtcgatcaa cgccactcat      780
caggatacca aagagtgggt tccggctaag ccggccagta tggaaacctg ggagaggggt      840
ggcctacacc tttattgggt tctatagctt tgctgatagt tttattgcag tagctgtttg      900
ggatgttcgt cgcaaggata tatgctatgt aatgactcta tcttatttag cattatgggg      960
ttatcgggat gtgttatttt attctgtcat tttctcaga acatccgcat accaaccgga      1020
attacaatct ttcctgcttc atccccttca tctgcttacc gggttgcctc tgactgtgta      1080
ccgctctttc accgagcagg ctttgtctat cattttatta actttgcgag ctaagtttga      1140
tcggtttggc aatatggttt ttgccgcaac aagtaggctc ccgctctatg tggccggcat      1200
tgctctatgg ttgctttccg ctgcgggata ttggtaaata gatggagaaa gaacgttcgg      1260
tgaaacgact tgtacgacc ttttgcccgc tattgactat agggaatgtt acagtnccagg      1320
ggcatcggtt catcccaagc tggtggtggt aaattaccat tgaccagttt ga      1372

```

(2) INFORMATION FOR SEQ ID NO:687

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 397 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...397

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:687

tagtcaatac	tcatgacatg	aactccgtga	agacaatcgg	ggacaagata	tttacatccg	60
tcatggcagt	aaggagtggg	aaggatcgag	tgctacgcga	actcttcgga	ttgtacgtcg	120
ctcaagaact	tcgtctttgc	caanacatgg	aatactgatg	ctctgtcagn	cgggcatctc	180
tcgtgctctt	ccttcttcca	ttcgctctca	cgaataaaaa	tcattggncg	gataaaaaag	240
anaaaaaatcg	gatgaaanga	aataatcagt	tgtgtncact	cttaaagctg	tgttgctctc	300
catgtnagct	ttcggcacag	caaaggcaca	gatacacata	gtcgtgcacc	gagtatgaaa	360
gctctggatg	attcacccaa	tcgcttcgag	gttttat			397

(2) INFORMATION FOR SEQ ID NO:688

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 507 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...507

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:688

gccgtgctcg	tccatttcga	cctcgcacag	gccgagggtcc	ttcatctctt	ggccaaatga	60
cgcagcagca	ccaattgctt	gtccgtcgag	gggaaagtgt	agaggattcg	tcgctttgcg	120
tatcgaagcc	tacatatcgg	agaaatcctc	tttcagttcc	atattctttg	tttcggttgtt	180
atgcttcatg	tttcttcttc	tgatgctgtc	gacgatgaag	tagagaatga	tgagcgcata	240
catgcgatgg	ccaaccattc	ggcgctgcc	atggcgtgcc	attcttgggc	aaaacatcga	300
actocatgta	tttgaggatc	gcacttacca	cacccatcaa	agccctccgg	cgatgaatcc	360
ggaagcgatg	agcgtaccgc	gttccttgcg	gatttattga	cagaagcgtc	cttcgagcgg	420
gtgctgacga	accagctgac	ggtccgccga	tgaggagagg	tgtatttagt	tgtaacggga	480
taaacatacc	agtgcaaaag	gcaagtg				507

(2) INFORMATION FOR SEQ ID NO:689

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 224 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...224

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:689

gcgagacatt ccatacagaga gaattgtactc gcccttacta catttgagag gaaaccggag	60
gtcttatgcg ggctccataa atgaatnttg aaacagcccg cgatcaatcg tggatccttt	120
cccccgactc aatttgtttg tatttcactn ggcataaaaa tggaatnttn aattgcattt	180
ataggtaggg tgtgcaatgc gcaatggtag ntnctatgtt tggg	224

(2) INFORMATION FOR SEQ ID NO:690

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1059 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1059

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:690

agattaataa ttgctggtga ttacttcagg attatcttgt tcgttgacaga tcgggaaata	60
ctacagcagg cttgaacacn tgggcttccct ccatacgggat ccaggcatat gccatgatga	120
tgatgatgtc gcccgatga acgatgcggc agotgctcca ttgagacaga ttacccccga	180
acctcttttg cccggttggt ataggtctcc aagcgtgctc cgttgttggt gtccacgatt	240
tggacttctc tccggcgatg atgttggcag catccatcag atcttcacgc atgggatgct	300
accacatag ttgaggttgg cctccgtaat ggttacgcgg tgtttttgga ttttaatact	360
tcgacgtaca tgttgttttc caattctcta ttttttacg attgcaaagt aacttaaaat	420
cgctgtaata ttgcataaaa acggcagttt aacgcaattg ggcttgatta ttaaggacat	480
acggcgcaaa tgcagaaaat ccgccacctg ccacgaggca gtaatatgcg gattattgca	540
cagaaagggt ttcaaatacgt taccggaaag caaggtaatc acctccggca aaagaggaga	600
aaaacagcgg ttttccgtgc atccgttgct gttgctcact gctctatatt ttgcatagca	660
gggttaggct ctttcatggt taatttgcaa ccaaaaagaa aagacaatgg caagaagcac	720
attcaagggt atgtttatgt gaatggcagc aaggagaaaag aaggatatcg ccccatcatg	780
ggacgggtac aatcaacggc acgggtggctc agttcagttg caagcgcacc atccaaagga	840
gttgtgggat gtgaaaggca acaggggcgaa aggcaagagc aggaagccat cgccaccaac	900
ctctcgctcg acaacatcaa ggcgcaaata acaagcacta tcagcgtctt tccgaccgag	960
aggcgttcgt cacggcgagg tgggtgcgcaa tgcctatcag gggctgggca gtgagtacga	1020
tacctgcta agcgttcgac aggggaatgcg cctctctgc	1059

(2) INFORMATION FOR SEQ ID NO:691

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1021 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1021

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:691

```

ccaaagacct ttatggcgat ggcagaaggc gatccggaag accacactta cgccaaaaaac      60
cactcettgc caccacccag gcagccatcc tctcgggcta ccaatccggt ctcaaagagt      120
gtctgaccga aatggcaaca ctctatccgg cagggaatgg caagagtatt ccacggggcca      180
agcagtcgct tccctttctga accggcttgg tatcatctcc gacctttggc gacaaatcga      240
aggaacagac aagaagagaa caaatgctc atttccgatg ctccgtctct attgacagga      300
tcatcgacgg gagcgagacc cctttogtct atgacaaaat cgggtacgca tcgaacacga      360
aatgatcgat gaatttcaag ataccagccg ctacagtacg aaaacttcaa gccctgctg      420
tccgagagtc tggctcacgg cagtacaacc tctcgtcggc cgatgccaaa cagagtatat      480
accgcttccg aatgccgacc ggcgtctgct cacagaggtc gtcagtcggg attttgccga      540
acatcggaga ggtcaatct accatataat tggcgaagca ctcccgaata atcgagtcca      600
acaactccct ctacaagcat ctgccacaaa tcttctgtg aggctatgac tcgcgaagcc      660
gagacgatgg caatgccga tcctaattgc cggaggagat caaccgtaca ttcatgcaga      720
cctatgccga tgtgggcagc ttgtgccacc ggctaaagta gaccggcatg gaagcgtctg      780
cattatcttc cgtcgccggc atcatcagaa gaagcggaaag ccaatctttc gtggaggagc      840
agatctttgca ggatcttccc cgttttatca tcggctctgca aaaagagggt atgctccttc      900
ggatattgct attctogtgc gcaaaaactta taggctcgcg agatagctcg tgccatgctc      960
tcttatcaac ccgaaccgga gaagaggact atccccttat cccgatgtcg gacgaatctt     1020
t                                                                1021

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(2) INFORMATION FOR SEQ ID NO:692

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 616 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature

(B) LOCATION 1...616

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:692

```

cgccctgctgg agtatatgaa ggccaaacct cttctgaatc tggggcttcc ttgggagaag      60
gttccggagc ggtgtgctca taccocatca tagtatcgcc gtcagcatga tcaacgaaat      120
gcatactttt gctcaagcgg ctgtgacaag tatttctaaa agttcatgaa ggaaaagcag      180
gcaaaaccat atcagcaata ttggcagcat ttatgctgct cacacgctta ccgctgtggc      240
gtttgtgagt gtccctgatg ctgctttcaa gcgcgccacc gattattgga gtctgtgggt      300
tggtttacgg gaggactgat ggttctaata tgccacttgg gacactgatc gaccttcctg      360
tcaactatggt cgtttccctt gcaactcctc ctgcgttctc ttacagggg ctttccatga      420
ggatggattg ggtgatttct tgatggattc ggtgcagggc gaaccaagga gcgcactctg      480
gctatcatga agattcgcat acgggtactt aatggtatct tggccttcac cttttactta      540
tgatagggat ctattctctg gcttctcttc cttccgatcc tgacgcttcc gcattagggt      600
ggtgggcgat cctctt

```

(2) INFORMATION FOR SEQ ID NO:693

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 660 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...660

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:693

```

ggcttggaga gccgtttcga agagatttcc acgcttatca cggatccggc gtaatcgcg      60
acatgaagcg tttcacgaag ttgagcaagg agtatcgcat ctggaaaaga tccatacggc      120
cgggcgcgac tatcgcaatc tgctcgcaac atcgaggaag caaagcatac catggccaaa      180
gagagcgacg aggagtgcgc gagatggctc gcgagatgct ggccgaggct aacgaacgct      240
tgcccttttg gaggaggaga tcaagatgct actcattccg gccaatccgg aggagacaag      300
aatgccatcg tggaaattcg cggaggaacg gggggcgatg aggtgcactt tttgccggcg      360
acctctaccg catgtacgtc aagtattgcy aggc aaaggc tggcagggtg aggtcaccga      420
cctgagcgaa ggagctacgg gggttacaaa gagatcgctc tctcggtcaa gggggaagga      480
gtgtatggta cctgaaatat gagagcggtg tgcaccgtgt ccagcgcgta cctgcgacca      540
gacacagggg cgcatacata cctcggcagc taccggtggt gtcttgccga agccgaaaga      600
agtggacgtg gagatcaatc cggcagacat cgagatgatg acgttccgtt caggcggtgc
660

```

(2) INFORMATION FOR SEQ ID NO:694

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1242 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1242

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:694

```

ggaaattggg atgaagcact tgccttgaag cttgncagca acggcgaggg agatggaagg      60
aacgtgtgat catagacggt cgccgcaagg atatccagat tactatctgg taagagacgc      120
cgaagcaaac gccattcgca aggagtgaag cgcatgcacc atctggtatt ggatcatggt      180
tacaagcgag tgctgaggac gattactgga tcgacgcacc gaaaaatgca ccccttttca      240
gttctctttt tacgatgttt tcttcgcgca tgaggagaag ctgaaacgtg ccccaaacca      300
acgaaagagg gcgtcaaagt cgtcatgcag ctatatgctc cattgttcac cccgaccaga      360
agatctgtat gacgggcaat agtctgtctc ttgcaactgg tcagtggagc aagcccggtgc      420
catgcaccat ttgggaaagg ggaatggtct atcacgctag agaaggatga attacctcca      480
cttttggaat taagtttttc attgccggac aagacgactg ctccgacatc cgttgggaaa      540
gggagaaaac agatcttacc gattcgaaga gacggatgcc tatggtgcgt ctatttggcc      600
ggtctctgtt tccgcgaggg tgattatatg ccacgcttgc cggcaccgtc atccccctat      660
tcggactgcg caccacaag gattgggcat aggagacttc ggtgcactnc gccgtatggt      720
ggactggcg gcaataccgg ccagcgcatc atacagctcc tgcccatcaa cgacaccact      780
tacaacgctc ctatcgcgac tcctatccat ataatatagt atcggtcatc gcctccatcc      840
tatctatgcc gatttggatg cgctaccacg actgaagaat aggctctgat ggcaaaaatg      900
gagaagcagg ccgaagcact gagggcactc agcaaatgga ttatccggct gtgttggctc      960
tgaaggagga atttctgcat ccctgtatcg acaggaaggg gcgaatgtga tgcgcaagaa     1020
agctttccgc aattcgtctc agcagcgggc gattggttgg atccatatgc ggctttttcc     1080
atctgcgcga caagtacgag ggactgccac tccatctgtg gcctgaaata cgtggggaaa     1140
aaaccaaadc gaacgaatgg cggatatctc cgaactaaaa cggagaccaa ttactatcgc     1200
ttngtacaat ttttactcca cgagcgctgc atgcccgat  cg                        1242

```

(2) INFORMATION FOR SEQ ID NO:695

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1066 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1066

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:695

```

gtcatggttt gccgaaggca ttgacctgct gaagaacttg gcccataccg aatcgaggcc      60

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gagttcctcg	gtctgaagtt	ggagttcctc	gaatatgccg	caagaagact	acacagaaaag	120
tgaatctttt	tgagaaagtg	caaatcccgg	ctacaaagac	gccatacgca	agatcaaacg	180
ctatctggag	gatgaaagag	tttgtccaaa	tcctctcaga	agattatgcg	agccaatatg	240
gagaacgtaa	caaaggagag	gaggtgatgg	catgattacc	gcaatgaaca	aatacttttc	300
ctgatctatc	accgtgagta	cgaagctttc	ttggaaaagt	tgctacgac	ggggtggtac	360
acatccggga	aaccaaggct	acgaaagatg	tgcggaattg	caagatctcc	tcaatttgcg	420
taaagagatt	gcccagacca	acgcatgctc	gcttcgtaca	aaagcgagga	tgctcccgcc	480
gaacagaccc	gacacttgcg	tccgaagctg	acggagaagc	tgccatgcag	gatgctcagc	540
tcttttcgcc	gaagagaccc	gtcttaaagg	cgcgatacctg	tctaaaaacg	ggaggtggag	600
cacatggaag	tttgggggca	gttcgacttt	gcatccacga	aagactccgg	aaagccggct	660
atgaagtga	tttctattcg	tcttccttcc	ggcttacaaa	cctgagtggg	aagaaaagt	720
cggagcagtg	gctataatac	cgtacgctcc	actgttcatt	tcgtcaccat	agggcataaa	780
caggtgccag	acccgatgcc	gagcgaatca	aactaccoga	ttacgatctg	gctcgcctccg	840
tcaccaacag	gaagagctgg	aagctctatt	ggaagcgaat	gcaaggacaa	aacttcattt	900
gccgacaatc	gtatggctga	actcacggcc	ttgacaacct	cctgtcggac	aaattcgcac	960
tcaccagtgc	catggtacaa	ccgaaggaca	agccgatgac	aaactgatgc	ttctcgaagg	1020
ctgggtaccg	tgtcagaagc	ttcgactatg	gagcaggcat	tggccg		1066

(2) INFORMATION FOR SEQ ID NO:696

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 409 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...409

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:696

tgcccgatgg	aagcgaagag	tgtaaaacaa	ggcgtatcaa	tcccgaacgc	ctattcctcc	60
cgaatcgaca	gccattcacg	gcattaggga	tgaggatgga	aggactgtcc	gccattccgt	120
tcggtggcca	aaagtctggc	gcaatggtag	aaggggtgta	tttggcaggc	ttcaattcga	180
cgcgattcga	tgtgccatgc	tggtggagga	gttcctccgt	gcccggagtt	ggacatcgac	240
ctccgcacag	aaagctcata	gacgttcaga	cgatttttca	taagatggaa	cctccacatt	300
ggaggcagct	actcgtttct	attgnaatag	aactttggaa	aatcgcattc	ggctgaagcc	360
gatacgccgt	gctacatacg	atgtgttcaa	ggccaattgg	atcgttatg		409

(2) INFORMATION FOR SEQ ID NO:697

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 958 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...958

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:697

aaggaactcc	tttcttttcc	attttcttcc	aaatggaata	gacggattta	ccctcgcttc	60
atctcatagg	acatgtccat	accggcaaac	cgttggttaa	gcggtgccgc	aaaatgctcg	120
aacatctcta	aacgatgctg	ctcgggtgctc	ggattttctc	cttgatggct	tcatattcct	180
gtggatgctc	gtatttaagc	tcaaatcttc	caactcgctc	ttgatggcga	agagacccaa	240
acgattgcc	aggagcata	gacatactgt	gtctcacctg	ctatcttcat	ttgctggccg	300
gaagcatgga	gtccagtgtg	cgcataattat	gcaagcgatc	ggcatcttga	tgaggataac	360
gcggatgtca	tcattcatcg	tcaggataag	ctgcggaaat	tttcggcttg	ggcggaacta	420
ttgctgaata	cctcgccgga	tttttggcca	gcccgctccac	gatctgagcg	accttgctgc	480
cgaacatata	cgcatactct	ccacgggtgta	ctccgtatcc	tccaccacat	cgtgcagcaa	540
gcacaacaga	tggaagctga	tcccaagcct	atttcctggc	acacaatcgt	gccacggcaa	600
taggatggag	aatatacggc	tcaccgctac	gtcgccttgca	ccggcatgag	catccttggc	660
caagtggaaa	gccttgctga	tcttttcaact	ttgcgacgat	ggttggaatt	caaatagtct	720
tgaatcaaca	aagagattcc	ctctgaatca	aaagcttctc	ttcgctgac	gcccccttat	780
tttcgtctct	atatcgggat	tctttgcact	cgcgtcttgc	tccataatct	atttcaatct	840
acaatgtgg	catactatac	aaatgtaaaa	aaaaggacgg	tgatcatcat	gcgcaaatta	900
ctgnctcg	tgcaatat	ggctcagcca	ctactttgat	tcagccacgg	gcttagtg	958

(2) INFORMATION FOR SEQ ID NO:698

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 354 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...354

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:698

gagttgatct	cctttggacg	agacgtctcg	gatttcctgc	cggagggggt	gtcctcgatt	60
aagaaaatca	aaacaaaaag	ccttgacagt	cagacttcgc	aaggcttttt	tgtgtccaaa	120
attcagccgg	tggtacatta	tcgggtctct	atgagaggaa	aaaagagtga	ttccgaaagt	180
agtactctc	tcaatatcat	acgccaaaaa	agttttcaac	aacgaagatg	agtttggaat	240
gattcaaata	agcatctgta	gagaggagaa	aagccgaggt	aaaagtgcag	ggaaaggaac	300
tggcatagat	cgaaattcca	cttaaaacca	agccgtacaa	cgactggata	taaa	354

(2) INFORMATION FOR SEQ ID NO:699

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 670 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...670
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:699

tccccggggtt	ggattgattt	ggtttcgagt	atccccgatga	taaatttttg	cggtttggtc	60
gagtttttag	attgattcgt	ctattccgaa	ttttgagact	tttcgcacca	caaaggaatt	120
tgttacctat	gttttttagaa	tcaaagccag	ggcgcattha	cttcagccac	gatttttagcc	180
atcttattga	tcattttctct	tccatagcga	ttcttcaagt	cgaaaatgcg	tcgaccagca	240
atatccaaca	gcggaagatg	ctatttggtg	gtcttacgtt	acgatcacao	ctgtggctat	300
ggagacaaat	accccgtaac	aaccgaagga	agaatcattg	caagtttttg	atgactgcag	360
gagtagggct	tttcggaact	tttacagcct	atttgcttcc	ttatttgtct	cagataacaa	420
aaaagaagaa	acagaaacaa	agaatgattg	tcaatcttat	tgctgctggt	gcctgatatt	480
gagcagaata	cagctgatac	cgcttccact	taattccact	catgaactct	attatcaaaa	540
gatggttgta	cagcgaaagg	ggcaaattgt	attcttttcc	gattggagag	atagatgaca	600
ccaatgcatt	gtttagatcta	atctgggttg	aaggatataga	ttcccgatta	aatacatggc	660
agtgcataaaa						670

(2) INFORMATION FOR SEQ ID NO:700

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 944 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...944
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:700

caagttgttg	cacgatgcct	atgcaaaagc	tttagagctt	cgnaagttgg	ttccggacag	60
gaggtcgaaa	atgtcggttaa	gactatctat	aagcctttac	ggccgagaga	tttcagccaa	120
gatggtagag	ctattgaagc	cggaagggtg	cgtgccaaag	tggagatcgt	atatcaaagt	180

ttggaaggct	tgcacggcg	ataccgaatc	atccgggaga	ctgggtatttc	tccggcgatt	240
atccgcaccc	ggaggcgctc	atttggtaaa	tgaagctttt	atcagctaca	tggagaggac	300
tatggcaaat	aattatttcc	agaatcgaaa	gagtattaag	aactatgaga	gagcaaagaa	360
aagcgacatt	gatattggac	gatggtagcc	gttcgaaggc	tattctttcg	gttgcgaaacg	420
tgtgtggcc	ggagaggctg	tttcaatacg	gctatgaccg	gctatgtgga	gagtctgacg	480
gatccgagtt	tgcgggacaa	atcatggtta	tgacctatcc	tttgggtgggt	aattatggct	540
tccgatgaaa	gcagctgagc	caaacggcgt	atcttgcttt	atggaaagga	cagaatacac	600
atggaaggaa	tcggtgtgtc	cgactattcc	cattcttttag	tcattggaat	gctgtcgaaa	660
gccttggcga	ttggtcmeta	cgtgagaggt	attcggctctg	acggggatcg	acacgagggc	720
attggccaag	cacctcgcg	acacgggttcg	atgaaaggaa	agataattct	cgaaggaggc	780
gaagcattgg	cttcgccgat	ccttacacag	tcaatcaggt	agcggaggct	tctgtcctga	840
agtaatcgtc	tacggcactg	gaagcaaaaa	gtgggtactc	gtgattgtgg	aagtgaagga	900
caacattatt	cgctcgcttc	ttccgtgaag	aataacgctt	ctac		944

(2) INFORMATION FOR SEQ ID NO:701

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 704 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...704

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:701

tgtaaccggg	ccttcggaat	ccgaccaagt	aagatgttgc	catcgggggc	gtcgaagggt	60
accactttt	cggtcctggt	tgggcttgt	cttcggtata	gttgagcag	tggctctggg	120
ttggcgctgc	tgtccccga	tactcggtga	ggtgggacag	aggactgtga	tggagcaacg	180
gatggctgct	ctttggcgga	gccggccggg	gagataccga	tccgctcacc	acgggatttg	240
cgtgcgtgct	ccatgggtcg	gaggcggagc	agtcagtcce	ttgctaaata	aagcgcgata	300
ttcatcagcg	acaactccaa	caacagacgc	ttgccattgc	tctgcgatac	tgttggtcac	360
aggcattcag	tatcttgagc	gattgggtata	agaagaagtc	gggcaacgtg	ctgccatata	420
cacatatcgc	tgtatgacta	ctcggactgc	tccaacagcg	gcaaggtaga	agcgtcctga	480
gccatcatca	atcgcggaag	aaagaagcca	atccgctcac	gatcacctgt	ccgtcgaate	540
cttggcaagc	aattcgtcca	acacgatcaa	tacggatcgg	taatccccctg	taaaaagaaa	600
tccgtcagac	ggaaataata	atcgtagtcg	aggatatcag	attctctata	gtattggcat	660
aggtaatat	gccttnogaa	aaacggcaat	gcggtcgaag	agcg		704

(2) INFORMATION FOR SEQ ID NO:702

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 719 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...719

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:702

gctggagtta	taaagcccaa	cagagccacc	ctcagcccg	tccgatcgag	accttataag	60
gagcccaata	tggttgccg	gtctcggtgt	cgatagcgtc	gccccaaga	aagggaagtc	120
gcagccggct	acccatttgt	catagacgca	tgcccggtct	cgatgtcgtg	attgcccgg	180
atggcgggct	catagccaag	tagttcatcg	cacgggagaa	gagatgagta	cccgctgtgt	240
ccatgagtta	taatagtagg	ccgtaggatc	gccctgcaat	acgtcgccac	catcaagagc	300
agcaactccg	atctgtccga	ccgggcagct	ttcagaaagg	aagcaagcgc	gacattccac	360
ccgaagtccg	tcttaaagct	ttgaaatcag	tggaataaca	ttcccgtgaa	gatccgtagt	420
gtggataata	cgaagcgaat	gtcctgcctg	cttgacatc	caccgaggag	aaacgtcgcc	480
agcggaagca	gacggacagc	aaaccgaaaa	gtctcttctt	cataccgtgc	aatctgtaga	540
ttcctaaaag	tctatttcac	ctgactacct	gcagcaactt	cagccgccgc	ataatgaccc	600
tgagcgaacc	atccgcatcc	tctgccgaaa	gaatcatccc	tccgactcga	tacctttcag	660
cttgcgcggc	ggcaaattgg	cgataagcat	acctgcttgc	ctaccagctc	ttccggagc	719

(2) INFORMATION FOR SEQ ID NO:703

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 420 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...420

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:703

ggcaaagtcc	atcttcaccc	actccggtcc	catatgtctg	aaacgtcgaa	ccccatgttc	60
gccttaagtt	gcccaaagat	cgctcgggt	tcaatacacg	tcgcttgccg	tgcacaagac	120
cttactccga	gttgagccga	tccttagctg	cgctttgtag	ttgttgagac	gatgattcac	180
ttcgatgata	ctattaccat	agcctgtctc	tctgctaatt	cccgaaatctt	ttatggatga	240
tattttctga	ccacagtaca	cgtctgactc	atcgatccga	acaaaaaatg	caccatttta	300
gttcgaattt	tctgaaaaaa	tggaacgaga	tttttttctg	tgtgcgtgag	aattttttgc	360
ttccgcgcc	aaacaaaaa	agttcccacg	cctggttttt	aggaagtgtc	aaaacgggaa	420

(2) INFORMATION FOR SEQ ID NO:704

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 819 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...819

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:704

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ccaaatgaat tcatatatga atttctccaa ctatttctat ttctcttcag gttcagtaaa      60
tatcttctat gcaaaaggcg tatttttagt cgcaaagtac tcatttataa taagaaaggc      120
aaataaaaacg gcaagaaaac gcctcttcga gcataaaaat gtcgcaagag gtgtatgtgg      180
taatcagggt acataaacag ggcaaaactcc acctttcgtc gtttgacgag acctctgagg      240
actttccctt gtatcggcag aaagagacaa attcacgata gaaattcctg tcgccgactc      300
tatcttccgc aacagtcggc tcttgggatg cttgccgtat ccggcaacct gcctgtcccg      360
acattgtagg aaaggacggc aagcagaaga acgttccatt taaaacatct gaagataggg      420
attacaata gcttcctaaa ttcattctccg ccaatctgtt gatttcattc ttgtatagatt      480
caagggtgat aggatgatgt tctccacata gataccgatg gtcatatccc tgtttctcac      540
gacatgacta tctccgccaa cgtgtcttgc aactctttgg caatatagtg gtcttgcgat      600
tttcaagggt gttgcgacag atgaaaagcg actcatatca cctttatcag cctttgcct      660
ttctcttctt gggactcttg aaaaatcttt gacattgggt cttcattttt gacgttccga      720
ttcaacacac tgctctctaa ttggagagcg tttatttgcg tctcattott ttcattgggaa      780
tacctgtgaa acaagttccc ggatggcaac aggatctac                                819

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(2) INFORMATION FOR SEQ ID NO:705

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 476 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...476

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:705

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ggcaaagctg gaggagctat ctgcattctt cccgatcggt gaggggctgc ttcgttgatg      60
cgcaaattca aggagcaagg tattcgctct gccattattc gggaggattc cgactttatt      120

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cgcacaacat	caaagagcgg	tacggctcga	ctacatctgc	acatcggagg	cagaggtgga	180
aaatggcctg	ctgacagtcg	tctatcgggt	accatagtg	atgcgaaggt	caaagccgaa	240
tttctcgtc	cctggccaa	gagctatccc	tcacccctgc	cgaaataatt	gccgaggcga	300
tggagccaat	gatgtaccca	tgcttgactt	ctcggccggc	agctcatatt	caacagttcg	360
gcacatccgc	cttccatgcc	tcaactacgc	atgaagccat	tctccaattc	atgggttgcc	420
gatagtcgcc	gacccgatcc	gtagaataag	aaccttcogt	gctaagaaga	aattta	476

(2) INFORMATION FOR SEQ ID NO:706

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 703 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...703

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:706

gtcggttactg	tttgcaggat	actctcccta	tcgtatctct	ctattgatta	gagtgcgttc	60
cgagaatgag	tttaatctat	ttttcgtggg	gcaagataga	atTTTTcaat	tccagcagtc	120
tttccctct	tctttctgcc	tttcagccga	gagcctcgaa	acaggcaaaa	ggataaagga	180
tgcgcgacga	agtatcctac	aaagtTccag	aaaatgatca	ccgtcgggac	tgcatatcga	240
atagcgaccc	tgtgcgctta	taacggatca	gacgagcaaa	aagataaagg	gtacgaacaa	300
aggaccgaaa	gcaacgacgt	aggccacagg	gtgcctatcc	cccaataaag	cattgtcata	360
gacaaaacag	aagaggagat	agcacgtcca	taaacggtat	ttgctccata	aaggtggtga	420
cagccacatt	gcgaacgaca	gcatgaaaga	gcgaatctgc	tcacagcgga	gcacgtgtcg	480
ttgtacccaa	tgaagagatt	gcatcccgtg	cgggagctga	gcagatagcc	aatcatcacg	540
ccaaggaacc	ctcaccggat	ggcataatga	atatgcaaga	gaagaaaaaa	accgtgaatt	600
tgtagtttgt	gactaagaga	cttcccggcc	tttctacttc	gctctgtccg	aatgcccatg	660
aaccactctg	ctacagccgg	atggcctag	cagggatgaa	ttc		703

(2) INFORMATION FOR SEQ ID NO:707

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 647 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...647

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:707

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agatcccttt gaatcattga gactctcttt gaaaggtcca ctctagaggt cccagagcca      60
aatattttatt gttctgtcca gaaattggaa gagatgaaac aatcctttat gtactaaatg      120
acaagatata tgtttacaga gttgcacaat gaaagaatac gagttgagcg attattttta      180
acacttccct cgttgaattg tagtatacct caaaggaggg gattgttcga gggtgcgcta      240
ttttggactt tataatgttt tactctgcct caaaaaaaaa agaatacagg gggttggtgc      300
tgcagtcgta tacgaaagct agaagttgaa taccacgcag gaataacgaa aaaatcaaaa      360
acaacacaaa aaaacagaat cggggactag agcgggggca tagggaatgg ttattttccc      420
actcatgggg atttctgcg caaaagctat atctttgnaa atggaaccaa tcagcgtgga      480
aggatttgta tgcttgcaac ccacgagaaa aaaatgctaa aacatttctt cttagaaagt      540
ctttcgacag ctattctcca atgggagtg gcaagccctt ctgtgcgagg aagtttacca      600
attaaaagca taaagatatg agctatctat tcacattgaa atcggtg      647

```

(2) INFORMATION FOR SEQ ID NO:708

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 568 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...568

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:708

```

ctgcaagaaa aagtaaccgt tcgtcctgcc aaagtgatcg tactggatga atcctgatat      60
tcgagaacaa agagctgcgg gatctgatga atgtgaaata ttcgtcgata ccgatgcgga      120
tattcgattg gcgcgcgcgc ttgtgcggat gtccaggaaac ggggacgcaa tatggattcg      180
gtattggcac aatactcagt acggttcggc ctatgcacga ggattttgtg gaaccatcca      240
agcggacgcc gatctgatca ttccggaagg tggattcaat tcggtggcgc tctcctcctt      300
gtcgaaaaaa tccgatcggt gattcgtaag gaagaataac agcggatact ccgatctttc      360
tctcaaaacc aaaaccttaa tgcgattaaa acaaggcttt ctttccaaaa cagcattcct      420
gtattgtggt ggatagctgc ctcttatctg ccattacgaa agctgctccg cacaggcaca      480
ataactatac atattccgct cctctttcta tcattnctcc cgacatcagt cgcttctatc      540
ggcctatccg cagagcatca cgaatgtt

```

(2) INFORMATION FOR SEQ ID NO:709

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 427 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...427

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:709

ttgccaatat ggaacgctcc ggcgtaaagc tggacacgga ggtgctccgc gcacagcttc	60
cggacttggc gaagagatgc agcgaatcga agatgaaact accgtttggc cggacactca	120
ttcaatatca acagtccctc tcaagtggaa ccgtgctctt cgaggaactg caaattaccg	180
aaaagcccaa aaagacaagt ccggcngcta ctctacaaac gaagaaattc tgggtcaagct	240
acaggaaaaac atcccatcgt gcgtctcata ctggactata gaggaatcaa aaaatactca	300
gtacctatgt agaagctctg ccggagatgc gctacccoga tggaaagctgc atacctggt	360
caatcagacc gtcgctacca cgggacgtct ctccagcagc aaatcctaata ctgcaaaaca	420
ttcccgga	427

(2) INFORMATION FOR SEQ ID NO:710

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 486 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...486

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:710

ccccgggaat aggcggattt tcgccggcta tcgtactgta tctgctgatg ctatcgtagc	60
caagcgtaca ggctgcgagc agaagtgaag ctaaaatctg ctccgctctc ctttcctctc	120
ttcttcatca caaccaaaaa gcaccatata atatggaact aataggcaact ttttttctta	180
tcctgctaata ctatttgtaa tccgatttct gattccggatg ttccgccattc gtcagatggt	240
tttcgacaga agaagaactc ttcacgacaa ggaacagaaa cctcaaaaaa ccctctccgg	300
gtgaaaaagt cgaactcgac gaacttgaaa agcgaataatt tgaaaagacc aaggagaata	360
ccgtagactt cgaagacata aaggacaaga gcgatgcang aaccggatgg atccatatat	420
tcagcagact cggatccttt tctccgatat caccctgtcc gcttggtatc cggatccgac	480
atataa	486

(2) INFORMATION FOR SEQ ID NO:711

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 543 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...543

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:711

```
gcagagtcag ctgacaatcg cgtcctgcat cgtgcaggaa gcaagaatca ctgacaatcg      60
cgtcctgcat cgtgcaggaa gcaagaatca actgacaacg cgtcctgcat cgtgcaggaa      120
gcaagaatca actgacaatc gcgtcctcat cgtgcaggaa gcaagaatca actgacaatc      180
gcgtcctgca tcgtgcggga gcaagaatca actgacaatc gcgtcctgca tcgtgcaggaa      240
agcaaaatca actgacaatc gcgtcctgca tcgtgcaggaa agcaagaatc aactacaatc      300
gctgtcctgc atcgngcang gagcaagaaa cagctgacaa tcgttcttat ttctcgccta      360
tttgacgagg aaaggagtac ttctctgatg gaacttgggg aaatttctat ttgctcggtta      420
cccatatacc ggaggtttga ctttcccgaa gacacttaga atcagctctg cagcaaaaga      480
gctcaatgaa cttccatgca acaagtctta cccgcagata cgatttctac naggaaatat      540
atg                                                                                   543
```

(2) INFORMATION FOR SEQ ID NO:712

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 490 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...490

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:712

```
gttcagtctc caacttgcta cgtgtatcgc gcagccggac agatgccagt tgtatgcaga      60
agcgtattgt tccaagaaac gcattccgtcg catgccttgt caaagctctt ggccgatgaa      120
atgaaaagga tgcgatccaa cgagcgttcc gctttttgcat agactgtaga gcttgggcat      180
attcatcgga tcgggcttct cttctacaga gagctgatga catacacccg tcatggaatc      240
aatgtggatt gcaactcttt gacctcattg tccaagagtt gtaccatctg cttgggttgag      300
caacctgctt gttcaggagg ttgagatgct tttgtttgtc ttgttgtctt tcttggtatt      360
tcgtagtctc cgatcggttt ttctgatggc ttgagggcct tcttacgttg cttctcaagt      420
```

cgctgtacct gcttggattt tgtcccgaga gcaggcagga taaatgcaga gaggagaaaa 480
 gatgatgcag 490

(2) INFORMATION FOR SEQ ID NO:713

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 659 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...659

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:713

gctgcatcag	gaatcgcgcc	gataccgagt	tggagtgtgg	caccatctta	ataagctcgg	60
cacaattacg	cccgatagct	tcttctactt	ctccgatttg	ggctttgcaa	gagaatagat	120
agggtagtct	gccatcacga	tgtaatcaac	ttcgatatgt	gaatcaagtt	gtcgccatgt	180
acatatggca	tttgacgttg	atttccccta	taactaaatg	agcgctttct	gctgccggtt	240
tgctaaatcg	caagatactc	caaaactaca	gtaaccattc	tcatcaggca	ttgaagctga	300
acgatggcga	catctatgtg	aaggatgtct	ttgcgaatca	ttgtggcact	tcataaaaga	360
ataccggaat	gaagtcggct	ctattttcct	cactgcttta	cgagaattac	cacctacaaa	420
attggttatg	tgtcgggaag	gggggccatt	tcaggtgcca	tatattttcc	ttcgccgaga	480
caaagcatgt	ataaatttcg	acattctgga	aaaggtcggc	ctgttgtacc	agtgcacac	540
acaactctga	ggaactccgg	cagcatgtga	caaagctacc	cgttctcctt	ttgatatgtt	600
ttacgcttct	tcgccgaaca	ttcggaggca	tatccgcaat	acgtctttca	taaagctat	659

(2) INFORMATION FOR SEQ ID NO:714

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 538 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...538

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:714

ggacggaccc	gaattgacg	ttcccgaaga	ggtgatgggc	gtgaaaatct	ctctatcgga	60
ttcttcgtgg	atccggacaa	tgctgttctc	tggcgcgagg	tatggcaggc	aatgccctga	120
cacagcttat	ccgcgatgcc	aattgggaga	gttggactac	ttcctgatcg	atatgcctcc	180
gggaacgagc	gacatcacct	gacacttgta	cagacgctgg	ctattaccgg	agccgttgta	240
gtgacacacc	gcaggacgta	gccttggttg	atgctcggaa	aggaatcagt	atgttgctcg	300
agagaagatc	aatgtgccgg	tactcggttt	ggtggaaaac	atgcgtgggt	cacaccggcc	360
gaactgccac	agaacaaata	ctacatcttc	ggcgtgatgg	cggtaagaat	ttagccgagg	420
agttgaatat	tccttgctcg	gcagattccg	ctggtgcagg	tatatgccaa	agcgggacaa	480
ggaatacccg	gctgtcggat	gatcgatgat	ggaatgcttc	gcgaatgctg	ccatgtaa	538

(2) INFORMATION FOR SEQ ID NO:715

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 634 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...634

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:715

aaatagaacg	aatgcttcgt	ggcgaaaaag	acgtgctctg	tccggggcgt	gtacatgggt	60
tgccaaaagc	agcggcacca	ccaatagcaa	aagcaagtca	tccccgttcc	ataccgccac	120
ctgcactatt	gccattatca	agggggggaag	actccctatc	gttataccta	cgcaatagac	180
ctgacagtcg	tttcttaaga	ctaaagggtt	ggtactgggt	ggcagncacg	cccctgtatc	240
catgatgccg	atatacaagt	cggcgacttg	agtgccatcc	ttgtcgagaa	tatgctgtgc	300
tccgcaactg	catgcgcgta	ccctcgaaag	aaacgctctt	gatgacgagt	ggacggagaa	360
gctcaaagcc	gtagttcgcg	aagtggcgca	tgacgagtcg	gaagcttgtc	cggcgtaccg	420
tcttgatcc	ttgtcttgat	caggatgtac	tgcagctac	aggccgagag	actttgcgga	480
tgtatggccg	aatggaagtt	tttccacggc	ggtatcagct	ttgctcctat	cgagcgcagt	540
gagaagctga	taccttcttc	acggatgcag	tatatggaga	cgtattatct	tcggaagggt	600
cttcgcattc	aggatgatcc	aaggataccg	aatg			634

(2) INFORMATION FOR SEQ ID NO:716

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 519 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...519

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:716

```

gagcgagaga tccgaaaagg tggatgcgca ccgaaaagaa agagaataca aacagcccga      60
aaaagtgaga tacagcgtgc agccacagaa aagaaacgac tgcatatatt cacagaaaag      120
aaacgcactg catatattaa tgtacgccgc gagagatgct gagggcagca ctattcagtc      180
caaagagaga aaacggacgg aaaaggacaa ccattccagca aaccgtttac gcgccacaat      240
tttcttttcg atgctccgca aaacgtggcg cgggaacttt ttctgttttg ttctggaagta      300
aaaaattctc gcgccacgag gaaaaaattc tcataagact ttctgaaaac acgcgccgca      360
atcagagcaa ttatggttcg agaaaatcag atggaatata tccgcccaag agcgagaggg      420
gtagctatga agctgtaccg aagcctcgat cgccacaata actaccgcaa tcagcgaagc      480
cgtcagagcc agaagagcaa gcatagacca cancgagga      519

```

(2) INFORMATION FOR SEQ ID NO:717

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1205 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1205

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:717

```

gggcgggtgcc tttaacaacgg tatccaatca cccgttcggc tctctggatg cattatgttg      60
atcgatatatta tcggatcggg acgtcccgat tatagcgttt ggtcaatggg tttctgtcca      120
tgatcagctg cctgcgcgac agcttcaacc ggtggctcca ctcaaaggaa tggccggagg      180
acttgacagc aagcacatgt atccggagtg aaggaggtag tgaaccgtct tcaaaacggg      240
cagccgtcgg cttcttcccg gccggaggaa tatccgtcta taaaggcaat cgcatcgggt      300
gatggacagc gaatggcaag ccagttgtgc caagatgata ctctcagtea ggtgccggtt      360
tatccgattt tcttcagtg ggcgaattcc tgtattttca ctctctcgga tggctgagct      420
gggctattcg gactccgcgc accctgccga gctattcaat aagcgagggc atattttcga      480
tgtctatata gcgatccgat cccgccagag actatcgctc gcttcgagaa gaatccgcgg      540
agctggctct cttctctat gaccggactt atcgtcttgc ccccgacca agaaaaacaa      600
atgaaacgct ccaagcaact ccgcatttat acagcttggc ggggtccggc aagactcata      660
cacttaccgg cgaatatctt cgtttaccct gcgtacgcgc ggggctttcc gttatataca      720
ggctgtcacg ttcacaacaa agccactgcc gaaatgaagg agcgtattct cgaggagctg      780
tacatctggc tgtgggcgga tctgcccctt tcgccgagga gctgatgcag gagtggctct      840
gactaccgag cagctacaag tcagagcaca ggaagtctcg acgaaatact aaacgactat      900
tcttcttttc gagtcaagac cattgactcc tctttcagga agtaatgcgt gccttctctc      960
atgaattggg actgccgggt gttttcggat cgagatggag cataaggccg tgctcgaaca      1020
ggcttgctgc cgtctgctgc ncagcttggg agaaaaagat acctccgacg tngagaatgg      1080
atcaggcggt tggctgaaga cctgatcnaa gaggggctg gacataaatc tcgcaggagg      1140

```


atagtcagct tgggtgatga gcttttnaaa gaacagtact cctgctatcc gaggaaggca 1200
aacta 1205

(2) INFORMATION FOR SEQ ID NO:718

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 574 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...574

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:718

```

ggctgtgttg tccggtgtc ctgtcttttt gaatttgacc atgatgaaga ttccggtcgc      60
ttctccggtg tggagagtgt ccatttgta tagtaagata gaaatggata gaattggcag      120
gtgccgactc tgcaatatca agatattcga tgtcttatag gatgcagcag ctgggatctc      180
ttgagcttct gtggtaggaa ccccttcgtt accgaattgc gaaactttgc ctgtatatatt      240
ccgacacttc atatccttgc acattgatgg tgggttttat catgcgaatc tttgtgccac      300
tcgtttgagt ttataatccc ccaacagttt cccttctgtc gtacccatatt gatctgctta      360
ttgccatgag caagcattac gaaatcgga gggctgtcgt agaagagact tcaatagatt      420
tctctaccac aaattgagaa acgcagcttc tgtggccgga gcattgaaat cgagattggc      480
cactacatag tgctgaagtt gttgttgcca ttgaatagtg gtcgcatttg ctctttgacg      540
gaatgatata ngccccttca tggatttgat agtc                                     574

```

(2) INFORMATION FOR SEQ ID NO:719

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 384 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...384

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:719

gggaaggcgt aatgaagaaa gaaattcttt cagcagatta caaaggcgag ttgttcgtca	60
ttctgtagct gattatgtca aagccgaaga cttcgtgaa acattattga gcgtcatata	120
gaagcaagca aatccaacct caaggctcac ccattgtcgt tgccggtggc tacggagtcg	180
gaagcaagga aaatttgccc tcttgcatga tcttgcatct gtattgggtg gagaagttgg	240
agctttcgtg ctgcggtaga tgctggtttt gccgatcatg acatgcaaat cggaagacag	300
gcattaccgt tcgtcccaag ctctatatcg cttgcgngt cagggacaaa tccagcacat	360
cgccggtatg ccaggganag ctct	384

(2) INFORMATION FOR SEQ ID NO:720

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 216 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...216
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:720

tgtaaggacg acctatttgc tccgcaagggt cgacctaaac gctcgggttag tcgacctgac	60
ttcttgctcag ggtcgacgta tgcggtttat tcccttggtg gtgcggacga gaaggggggt	120
acgaactgga aaacaaccct ttataaacac ccgtttttca aagggtotcat gctgtggaga	180
agagactggt gataagatat cctctccgat ggatgg	216

(2) INFORMATION FOR SEQ ID NO:721

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 524 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...524
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:721

ggccgtttcg ggcagatgga tcagataccc ttcagaccaa ctgttcttct ggactccatc	60
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gaaaggcggt tgtgtacgga tgtatttagg gagtttggtg caacgagagc gtacgaatgt      120
cggatgagcc gtgcaatcag atcggcaggg catccgagtc caaagctacg ctgttccaat      180
gtcgtttgtt catatgaaag cccccgtgat accctcgtag tgcatacctta aatgttcgga      240
ccgatgggat cgcatttgag tgcgatgact ttcttttcgg aatcaagggg tatcgagcaa      300
acattttgcc ggctactttc ataaccaacg taacatcatc gaagggaaac tctcctccac      360
ctgtggcagt gacaagcata gctctcgagc ttctctatgt ccatatatta ttttattttt      420
gctacgttat gaatttcgct cacttttgct tggggcacgg tctaacaaaa ataatggaaa      480
aactcatttt gccacaaaca atccacataa gctcaacgag attc                        524

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(2) INFORMATION FOR SEQ ID NO:722

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 1150 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...1150
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:722

```

gctcgggtanc catatcatna aaggcaaagt acggacttcg taccgcgtat gacagctccg      60
accggcaaaa aacggtnagc cgtagtcaaa tccatttccc ccggctctga ttatgacatt      120
caaacgctcc ttattcttcc tctgtctctg ctctccgtgg ccacagctcg gggcgcagat      180
agacgtcgat cgggtgtcac gatcgggcgc aatgctctct acttcaacga ctacgtgggtg      240
agcatgggta cttcaaccac gtggtaggcc tgcgcccgtg gatggcggaa cctttttcta      300
tcggggaata gccaaaatca gtctggaaga ctatacaggg gcgaagccga tgcttcggcc      360
tgccctgcagc gcaatgcgct catccccaaa gctatcttct tcggggcgctg gcacggcaga      420
atctgggcaa aatcgattca gcattcagga ctaccgtcgc ggattggagc tgatgccgaa      480
cgatgagggc tgcgtggtgaa tctgaccgga gtgctcaccg acagcaaacg ctatgccgag      540
cacgggaagg ggtagccgaa ctgctcaaat tctaccccaa aagcaagcag cacatatagc      600
tctcagcgcg atagagctgg gcgagcagga taccgtccag ccattcgcga actgaacgag      660
gtacttcgga tggactctct ctttgccctg cctattcgca gatggccatg ctgcacctca      720
agagcaagcg caacgagagg ctatggcagc cctggacaaa gcaatagaat tggagccgag      780
cgaatgtcca actatatcaa ccgcggtgtc atccgctacc aatcgaacga cttcgtggag      840
ccatggacga ctacagccac gtcgttcgcc aaaagccgaa cgcaagttgg cacgtttcaa      900
ccgtgccttg ctccgctctt acctcggtga ctgaacaatg ccatcgagga cttcgatgta      960
gtcatccgtc tggagccgga aactatcatg cactctacaa ccgtgccatc ctccctcacgc      1020
agatcaacgg aaccgaaaag ccattaccga cttcgacaaa gtgctgggac actatcctac      1080
tttgctgctg gctactatgc tcgctcccaa gccaaaaaag cattggggac actcgcggag      1140
ccgaacggga                                     1150

```

(2) INFORMATION FOR SEQ ID NO:723

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 1022 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular

- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...1022
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:723

tgtcggnata	tgacaccatt	ttggccgacc	ggtggcaatg	attgtcggta	tatcgaaaat	60
atcaaattga	ctactcctct	cgatctatcc	cttgccaact	gttattgaca	tcctaatacc	120
taaaaaacat	aagttacatc	tccacatgtg	gaagaataca	agacaaactt	aatcgaagac	180
ctcgaaaagg	gctaggcata	taacgccatg	ccaagtttta	gaactaactt	agctactcaa	240
tgttgactgg	tgagtggaaat	gtgcagattt	tttgatgact	attgcatatt	gaggaaaaac	300
ttatctttgc	agcgcgtgaa	gaggtaaatt	cattcgcaac	ggttggtagt	tcagctgggt	360
agaatacctg	cctgtcacgc	aggggggtgc	ggttcgagtc	ccgtccatac	cgctaaatag	420
ctgaaagata	ggctataggt	ctctgaagca	attttagaaa	cgaatccaaa	agcgtcttaa	480
ttccaacgaa	taaggcgctt	tttctttgtc	gccaccccac	acgtcggatg	aggttcggat	540
aggcgtatat	tccgtaaata	tgcctccggt	ggttccattt	tggttacaaa	aacaaagggg	600
ctgaaaaaatt	ggttaaccaca	gacgacgtta	agacgatttt	agacgattga	caaattgctc	660
tgtttcaaaa	tcatatgtcg	aacttttagc	cgtatggtta	cactaatttt	ggagcaaaat	720
gaagagtcaa	tttcgtcagt	tttttacttg	cgcagcaatt	acatcaacaa	agaaggcaag	780
acgccatcct	cattcggatt	tatctgaata	aggagcgttt	gtcgcgtggg	tctcaggcct	840
gtctgtcaat	gcccaattat	gggattcaga	aaaagaaaaa	gtaaaggaca	tagtgcagaa	900
gcacttgaag	tcaatcgaaa	gatcgaagaa	acagggctga	tattctgacc	atttaciaac	960
gtttggaagt	aacagtagat	atttgacgcc	ggagaggatc	aaatcggaat	actgcggaca	1020
ga						1022

(2) INFORMATION FOR SEQ ID NO:724

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 542 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...542
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:724

gtctgcaggg	atggtacgga	tggttcagc	ttcatgtgcc	agtatttcga	gatgggttcga	60
ttgtgtattt	ctgccttcac	gtcgaataaa	ttgcgcgtgaa	aagtatttat	ttaattttgc	120
atattatgct	tttaaggctc	tttctttcac	taaactcttat	tcgatttaga	attggaaggg	180

tggctaagca	aaatgcatta	agctaaaaca	ttgagaaaag	ccctgaaagc	atgatagccg	240
gaaggtaacta	tgtaacggat	attccgaatt	tataaatgga	ttatcaacta	tacagctgcc	300
gagcggtttg	catgtggtat	ataaacgcga	tgcgggcgaa	gttcatacgc	cggctttgcc	360
ataggcgctcg	gcacacgcca	cgaaagctcg	cgcacatcatg	attggctcat	ctgacggaac	420
acatgctctt	caaaggcacc	acctgcgcaa	tagccttcag	atcattcgtc	gcatggaaga	480
ggtcgggtgcn	gagcttaatg	ctttcaccca	gaaagaatcc	acctatgtgt	actgcatctt	540
tc						542

(2) INFORMATION FOR SEQ ID NO:725

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 787 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...787

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:725

cggataagtt	ggcacgggct	acatcgacat	ggataaatat	cttcaggact	cgtacgggac	60
naancgatac	tgggagacta	agcggtagca	attatccgaa	ggagnaaaaan	cggctggaaa	120
gggnctgccg	ccgaatatga	atcgcggttg	agtctatcaa	aaaagaacgc	aaacaaatac	180
tggacgaagc	ccgccacaag	catccgtgat	gctgtcccaa	tcgtctgcac	agatagagaa	240
atcaaccgcg	acatcaaaga	ggcacaagcc	gaaagggaga	aaacgcggag	agcagacagg	300
agctgaacga	cttcagggaa	acgatcaaca	aagaagagat	cgaaaagaag	agcgaatcaa	360
tcgggagata	gagaaaataa	aacggaggaa	aaacgggaagc	aggagaaaagc	agcaagccgt	420
tcggccgaaa	cacctgtaca	gcaaagctgc	aagaagtgcc	ccaacccccct	gtcatacaaag	480
tgggcgatac	gtacgaatca	aaggacagac	ggctataggc	agtattatag	atatgaatgt	540
cgggaggcta	cgattgctct	cggaatgatc	aaaacgactg	tgccgatcat	cggttggaac	600
cggccaagcc	cgtcaaggag	cggaagtctg	agcctgttcc	ggggcatctg	cccgaatgat	660
catagaccgg	atccacgaga	agcgttggat	ttcaagcaag	acatcgattt	gcgtggcatg	720
cgtgtgaacg	aagccgtcca	agcccgatcat	gtatttttat	cgatgatgcc	attccaactg	780
ggaaacc						787

(2) INFORMATION FOR SEQ ID NO:726

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 543 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...543

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:726

```

ggccggtttgt ttcgagacgc agcactatcc cgattcgccg aacaaaccga ttatcctacg      60
accctcttgc gcccggggcga agtggttcgag tcccggacgc gttccgattc ggtatcgteg      120
agtgatcttc tcacaaggat tttgtataaa ccaatcataa acaagcagaa attatggaat      180
tagacttcgt aaggagagat tcatcaagca ctttgacgga tctacgggtc agatcttcac      240
ttctccgggc gcatcaatct gatcggcgaa cacacggact acaacggcgg tttctcttcc      300
ccggtgctat agacaagggc gtcattggccg aaataaaacc gaaggttcgg acaaggtaag      360
ggcatattcg atcgacctca aggactatgt gggttcgggc tcgggccgga cgatgctccc      420
cgtaaccactt gggcaaaagta ttctatggcg tttgtcgcga gatgatagcc cgaggcgtag      480
aggtaaaggg ttcaatacgg ccttctccgg ggatattccg ctcggagccg gcatgtcctt      540
tcg

```

(2) INFORMATION FOR SEQ ID NO:727

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 494 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...494

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:727

```

aggatccccg cccacaggcc gtatttgctt acttgatatt ataatcatca gacaatccta      60
ccatataagt gaacagcgaa ttagtaattg acgttaagcc aaagaggtat ctatggccgt      120
cctggaggat ggcaaaactcg tggagctcaa cgcgaaccgc gcaatcttcc ttttgacgtg      180
ggggatattt acctcgtaaa gtgaagaagg tgatgccggg tctgaacgct gctttcgtgg      240
atgtagatac aagaaggacg catttcttca ttatcttgat ttgggcttga ctttgatgct      300
cagcagaaga tgatggagat gatgacaaaa agcaaatcga ttcatccttg tccaaagtgc      360
ccctcggcag cgacctccct aaagagggga agtcgcagat gtgctcaagg ccggacagca      420
gatcttggtg cagatagcca agagccgacg tctaccaaag gccacgcct gactgccgag      480
ctttcttttg ggcc

```

(2) INFORMATION FOR SEQ ID NO:728

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 309 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...309

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:728

gggattgaca ccatcttcgt ggagtagctc ctgaatgata tagctgtact gggaggaagg	60
gtcttacgta ccttggagcg agtatatttc tctgcagctt ctgacacact ttgatcagct	120
gattcagcgt gaccatatac cagtcctcat ccgctcatca ctttgcttca cgagttcgag	180
tttctcgnga ggataaagat cagggtgcac agctcttgct tctgatatat ggcgnaactg	240
accacgaaga cctcgtctac ctttctccga atactaccgg acgcattctt gagccatgga	300
taaaggctt	309

(2) INFORMATION FOR SEQ ID NO:729

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 500 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...500

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:729

gcttatgtcg atctcttttg tcgctcttcg gctctcgtac atgattgcat gctttcaccg	60
tggaatatca gatcgtgggg cgtccggccc tctttatggg aagaacggac gccttcctca	120
cgggctcaac cgagctgccc aagaggcttc gcgttgcatg atatggcaga ttctgcgga	180
gacatcgatt cgtttcccaa aagatagcag agcgcagacc cgatccagta gccgataggc	240
gtcgggtcttc atccgggact atttgcctcc tccccgaggg gctactgcct cagagtcac	300
atcgacactt tgctcacatc gcgttcgtaa aatcgtcggg tctcacgccc aaaaacgtgg	360
cgcgggaact ttttcgtttt ggttcgggaa agaaaaattc ccgcgcgaga acgaaaaaat	420
cccacgccac ttcttttcag ctttggttcg caagttcggg cgactttcgg ctcgnaatttt	480
tccctgaacg ctgaatgact	500

(2) INFORMATION FOR SEQ ID NO:730

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 733 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...733

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:730

```

cgaaggggagc tgtaagctt catacaactct tagacttcaa gactctgttc ctgaatatgt      60
gcatattagt gatggtaaag gacatgatgg caagatggca attctattcc tatcccagca      120
ggaagtatcg tcgtggctga ccgtggcatg ctgataccgc cttgctcaat agttgggaca      180
gcacccaagt gagttttag tagcgcaccc aaggtcctta aaatatgagg ttattcaaga      240
gttggaactcc cagaacatgg gcatcagcaa atactcgtag atcagagagt acggtcacag      300
gcgttcagac gcaaggcaag tacactaagc cattgaggca tatgccctct acaacgagca      360
acatggcgat gtcgttgagt tattgaccaa caagacaccc ttgcagcaag tagtatagcc      420
ttgctgtatc gttcaagatg gttatcgaga ttttctttcg gaatttgaag caacgcctca      480
gcatgaaggc tttcttgga caacgcgcaa tgccgtagag gtgcaaatat ggaccgctct      540
attacaatgc ttttgatgg ctatctcaag agtatcgcca aatatcgggg tgcttgtcta      600
atcttgtctc ttcgctaaga atcaacacat ttaccaaag gatctgatgc aatggcttaa      660
tgagccggtt acgcctccgc cagagccgaa aatcagctct ttagcacat aggggggatga      720
ccacatttcg aaa                                     733

```

(2) INFORMATION FOR SEQ ID NO:731

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 461 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...461

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:731

```

gccgatgcac ttcttcgggc tgctcggttc aggcattgtc ctaatcggct catagctttg      60
gccgttgtcc ttgtcaataa gttgtccgct ataatcatca tacgcaggca cctttggtga      120
cggatcggcc ttatttcttc atcgcgcgac ggcgatgatt atcggcacgc aactgttcct      180
aaccggattt gtcggttagat gatcagccgt caggcttcgg acagaaacaa ctataaaata      240
gagaagagat ataatgaaac agattcctca agattttcgt ttgatagaag atttttccgc      300

```



```

acgcgcagat ctgtacgcaa gtttatcgat cgtcctgtgg aggagagaag ttgatggcca      360
tcctcgaagc cggacgcata gtccttcgg caataattac cagcccgtag catttcctcg      420
tggtcagaga agaagagggc cgcaaacgct tggctcctg t                          461

```

(2) INFORMATION FOR SEQ ID NO:732

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 404 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...404

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:732

```

agccagtgtt cccagttata taaaacaacc ccagggatgc ctttactacc ccctgagggtt      60
cttttaaata acttgttcca ttgccgnatt tcgtctatgn tcagtcatcc gttcgtcgtt      120
gaatcgggtga aatcttttta catggcttga aagaggccaa gaagccacag acaatccctg      180
ggaagttaggc tataacattg gccaatcctt cttcttaaga ataaaaccat atcctaccca      240
cagtagcagt tgatacctgc gaccattggc tgaagccaat caccctttatg tccaagagat      300
tggaaccaat ctgtggaata taagaaacat acatcgccat ancgttgccg tggcaatcca      360
accgagaact gaccaaaatt tttcttgat tcttttacta ccat                          404

```

(2) INFORMATION FOR SEQ ID NO:733

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 555 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...555

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:733

```

gtgactattc ggcaaagaga tatgaagacg agccactccc aaagtgtcgc acgaagactg      60
acatcggcac gcagttcttt gagatcgaga ccggtatttt ttcgagaaaa gaaagatggc      120

```

gcagctgagc	tttcagtc	gtactgtgc	ttggaaaaga	cgtacttttg	cattcaagtc	180
gagcaatccc	aatgtgcgga	ttgggtcttg	tacaatcccc	aagcagagag	ccggcagttc	240
ctgagaagat	gggtattgata	ttgagtcgta	gccggctcgg	ctcttccgga	ttctactttt	300
cagagcatcc	agaaggaact	gaatgttcag	agcncgtatc	gggcgcgaac	gatatacatc	360
gagttcgctt	ttgaacagac	gagcagagga	gagctcagac	gggctttcaa	aagagggagc	420
agatccagcc	ccccggtcaa	agttcggctg	acacccgcag	gacgacgggc	acgatcgaag	480
atgacaatat	gtcgatctcc	atttgtcggc	caccaaccaa	tgctgatgtg	cccgatgcga	540
catgcgttcc	gagtg					555

(2) INFORMATION FOR SEQ ID NO:734

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1169 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1169

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:734

ttcgccactt	gacatcacgc	gtaatcgaag	gattatcact	cttacgggca	tcttgtctat	60
ctcatcgata	aagacaatcc	ctctctcggc	ctgtttgaat	cgtagtctgc	ggcctgcaaa	120
agtctggtga	gaatactctc	aatgtctccc	ccacatagcc	ggcttcggtc	agtaccgtag	180
cgtcgactac	ggcgaaggaa	catggagcat	tttggtatc	gtacgagcca	agagtgtctt	240
gccggtcccc	tgggaccgac	cataataata	ttgcttttct	cgatctctac	gccacgctgt	300
cctcttgctg	gagcaatcgt	ttgtaatgat	tgtatacagc	gacgaaagaa	aacgtttggc	360
atcatcctgc	ccgataacat	acgaatcgag	aattccttga	tctctatagg	ccgaggcaag	420
tcctctctct	tcagattggt	ctctcttccg	atttgaattt	ttgcaatgct	tctcgaacca	480
cctctcctgc	cggagagcac	attcatcgca	gatatgagca	tggactcctt	cgagcatcag	540
tttacctgog	ttctcggcac	gccacaaaaa	ctacagtatt	cttcgtcctt	ttctttgccca	600
tgagaaatat	acagtccccc	tttgggtaac	gagaggggtac	tttcgattct	tttcgaggat	660
tttatctatc	atcccgtact	ccaatgttcg	ggggctgtca	tccaatagtc	ccgatcacta	720
tctttttcga	cctgccgacg	ggctttccac	tgtgagaaga	gataatcgtg	taaagctctt	780
tcttaacgcg	agaatctcgc	gagctgcgat	ctccaaatcg	ctggcctgcc	cctcatacca	840
ccaagcggct	gatgtatcat	cacgcgggaa	tgaggcaaaag	caagcgtttg	cctttcgttc	900
ctgctacgag	cagcactgat	gccatagacg	cgccatgccc	gtacagatag	tggccacatc	960
gcaccctata	tactgcatcg	atcgtatatg	ccataaccgg	cataaacaga	tccgccgggt	1020
gaattcagaa	gatggaaata	tctttaccgg	ggtcggcgct	atcaagataa	agaagctggc	1080
ttgaatgaca	ttggcgtgtg	aatcgtcgat	ctgagtgccca	aggaagagat	ccgatccatc	1140
attagacgtg	agaacacatc	catttgtgc				1169

(2) INFORMATION FOR SEQ ID NO:735

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 495 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...495

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:735

```

ggcgcatggtt tttataccaa tggatagtagt aagcagggat gattcggtat cgtgccagta      60
gaattacaga tcctttccat gcgattcttc atgcttatcg tatgctgac ggacacaaag      120
aagatgaagg ggggcactta gaggataaaag ggaggggatt tgtagggcg gatttcaaaa      180
aaataagggc tatctccgac agcccttact tccttattaa ccttaaaatc taataccatg      240
aaaaaactgt acaaaaaataa ggcgatgtat ttctcgtgca actatattag gccaaaaggc      300
gcatattagt ccaatcaata tttgttttcg gccttatact cttttttctc ccatattcga      360
acgggggatca tacgccagaa agcgacccag taacgatagc gccagtcgaa agtcagcagt      420
cttttttcga cggatgacag ctttactatt ggcttgggca actatcttgg actccatcaa      480
gcattggata ttacc                                     495

```

(2) INFORMATION FOR SEQ ID NO:736

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 522 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...522

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:736

```

ggccaaatcc tgctgtacga tcttttcatt tttcgcagcc agttcggccg aagagacgaa      60
atttcgtttt gctgcttttc caccagctcc atcagcttcg gacgttatac tccagcttcg      120
aaagatcgag ttctcttctt ccggtcaaga ataatccttt tccttacaaa agtaaattat      180
ccgcgccaaa ctggcactaa ttttgtgtac ttgtataaag agtaaataag acagtcatta      240
cggagaaaaa gatttggtta ttttgtctt cacagaaagg ctgctctgca taatgcttct      300
ctatattcaa ggagccggta atgaattgaa aaagagaaga ttgatagaat tgcaaaacat      360
agaaatgcta ccaactcatga cccaccgcct caatcaatcg gaatatcctc ttcgatcgga      420
tatgctgcag cgatagacct catcccggtc gggattgtag agaacgaatc catcagatat      480
gcaaatcata atcgaccgat agcatcatag cataggacaa gc                                     522

```

(2) INFORMATION FOR SEQ ID NO:737

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 537 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...537

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:737

```

cggatcgcgt acgggctccg tcccagcag atagagtatt tcagctatgt agcaccttcg      60
ctttcgatga agctactact ccatagcgta aagctgactt cgtaggaagt tcgccattgt      120
gacggcgagc gtagtcggcc agcatgtctc tgccatcttc ttcccttttt cccatgcagc      180
tgctgatggg gtggcccggc attgatagag aagaggtttc ttccggtagg aagcgtctcc      240
ggattgcgat atagtcgcca cccggcgaa gtgccgtata accgccggag agaggttcat      300
catagaggtc agctccagct gtgggctggt tttgagtgcc ttaagtagaa aggtatctgg      360
gcaatagcat gcttgagttc gctgatgctc gcgccatggc tttgtctttg gaggtaagct      420
ctcgtactgg ctgattcgtc aggcgggttg cttggcttgc gacttatcag gcatcatagc      480
tttttgcctt tccgaatgtg ccgcttgcac agaatccttg cccgtgagaa ggcgttg      537

```

(2) INFORMATION FOR SEQ ID NO:738

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 399 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...399

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:738

```

ggcataaacc tccagcatcc gtctggcttc ttcttcggct tcctcttttt agcatgagcc      60
gtatgccctt cttgccaaag gaattcgggt gtccggagaa aagacgtgta cgcatttccc      120
atogaactac attggcccac tgattgcgag gataggcaga tcacgggtggc tttgtatcca      180
gttcttatat gtattcaaat gatggtctcc gatgtcggac gtacgatcag ctcttcttcc      240
aacttgcttg cggatccact actacgccgt ctccatcggg attggctttg agccatagtg      300
agttaccacg gcgcattcct tagcaaagcc ttccacatgt nctcttcacg gctcaggang      360

```

ctcttcggga taaaaagagg gaaataggca ttaccgtgt

399

(2) INFORMATION FOR SEQ ID NO:739

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 437 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...437

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:739

```

cgttacactt tcagggaaat acttaagggt cgtattcaga gcaaacaaag ctcttggtgc      60
ccctcaggat aagacattgc cacacgggtac atttcggctc actaagttct ttcggagcag      120
tcttaatgat ttcacgagct tcttcgaggt ataatcacga acgatatacc ccatgggttat      180
cgtattgcga cgcaaatcgg atagatctga tccaagatat aacgataaga cgaaagttgc      240
ttcaggcctg ttcacgtgca tcantcatcg gcatatttat cggagttgat tatcccaata      300
cgcggtcacg atcggctata tcaactcttt cgatagccag tttagcccct tccaattcct      360
cactcgccna attcagtggt tatattcggc aagttttgcc atacttacgc accaattcct      420
nccgaggtct tttagca                                     437

```

(2) INFORMATION FOR SEQ ID NO:740

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 346 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...346

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:740

```

cgccttagag aaagtgtcca tcgctaaggc ggtgccaaat taccattttc gaacaccgag      60
ccaaaaaagt ctctaatacg gtgccaatca caactttgat actagagaaa agctcggca      120
aataggctat cgactcatcc gaaaaattgc ataacaatcg caagctccga aagccttatg      180

```

```

gcgaaccaac aaaaacaaga cagccacctc gtttgcaaag cgaacaaagt ggctgtccta 240
tatgttgca ggcctatggaa accccttata ctcanagaac gggaatcgac gaagcngccg 300
ggctataatc tgcgtcttcn aagtgtactt ctctgtgaac gttcan 346

```

(2) INFORMATION FOR SEQ ID NO:741

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 882 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...882
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:741

```

cgtcagatca ttggtatcct gctcgtctat gcgatgtagt ttttctgcag caaaatatgt 60
cgcgaggctg taaaagaatc caagtcgccc actactgctc cggctctgca ccatagtcca 120
gcaaattctg tatggctcca tcgcaacgac gatggtagct tcaggatgct ccgatgctcg 180
ccggaggata gcaaggggag gattttacgg ggaaattccc ccttagccag aataacaaaa 240
agcgggctgt ctccggagta agcgaaggaa agaaaatcat aggtcgatgc tgatgtggcc 300
tgctgttgca tcttgcgcca ccggaaatat ccagaacgg acaaacggta ttgacggcaa 360
agacgacagt ggtgatattg tcgccggatt taagaaaagg gataagctga tgatattggc 420
tacgaaccag cacaccaggt gtggcggatg cgacgcgcca accaaatcat ccgacaaaag 480
ctgattacag ggcaagcgta tcggccccacg gcacaagact atccgtatag tgggacaacc 540
atagaacatc gggagaaaag ccaccgtagc cgcagcaagg ctgatccaag gacacgcggg 600
gagatggatn cgatggcacc ctcttcgctc cctttcgcgg tggcgaagcc acatcaccca 660
gccgataata ctggtgatca gatagtgaac ttgatgagca cattgccgta gaactgcgcc 720
tcgatcgaga gataatgtag aagagcggca ggacgatccc cacaggccac agccagacac 780
tcgcttatat tcgagataga cccaaataaa attgacgagt gctgctgcca gctgatggga 840
tgagccacaa tgaattggat caccgcgtgt catcatcgga tt 882

```

(2) INFORMATION FOR SEQ ID NO:742

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 474 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...474

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:742

tgatgtccgt	gatgatgtgc	ctcatgttca	tgtttgtgct	ccgagcaacg	gcgtgggcgt	60
gagattgttt	tgtttccata	gatttgtctc	ctacacatat	gatctgatgt	ttttgttttg	120
acggcgtgtc	ataatgagca	atttgcctcg	tgccgtgcgac	attcggcttc	agtcacgtac	180
ttcagtacgt	tccttttagac	tctgttttag	cacctttgtg	ctccaaaaga	attttgacac	240
tgctcatctt	tattgcaaat	gtcatcattt	tgtcgacatt	tttaccatat	atttgccgtt	300
tcaaaaagta	taacccttga	tttcaggaaa	ttcatcatgc	ggctaaagat	cgagaaatga	360
gccgagaatt	cggtttgag	gtaattaatc	ggcagcctac	ggtgtccttt	ctgtcgtgga	420
ttcggacggt	gcaccctatg	cttgccctctt	ttcatcgtgc	gcgatgggga	gaat	474

(2) INFORMATION FOR SEQ ID NO:743

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 514 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...514

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:743

ccnaaggccc	agtacggtaa	ggccgatgac	caaatccgat	agtcgaaatg	ctngnccat	60
ggaggctgcg	ccatcggtga	gaaaattggc	tccgccaaaga	ctaaagccaa	tccgataatt	120
agaagcagta	tgttcaatat	cattgtttat	aatagctggt	tgttcgtgga	atggactaca	180
aagatgcgtt	tttttcttat	cggttgtttt	caatctcgac	tgagcaattc	agagtatgct	240
tcttctaccg	gttgtaaaac	aaacgccact	ctgcatggga	tgccgtttgc	atggtgccag	300
ccggcaggct	gttctgtctg	tactttcggc	cggccaacga	tatgcaggtc	agcgatggct	360
tgtacggcct	ctgcataatt	gtcgtcggtg	cgttgatgac	ggctacgccc	gtactgaagt	420
cgttccgact	accgcgctcc	tcatagccca	aaggccgaag	cccgaaggt	cggtcgtcac	480
cgtcggaata	cgaaagcgat	gctttccagc	ggtg			514

(2) INFORMATION FOR SEQ ID NO:744

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1428 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1428

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:744

```

caaaacagaa aaactatact acctttgtta cctaaacatt gcgataccca tcatgaataa      60
ctttttcaaa atacacgaca acttgctacg caacctatcc cttcgctgcg taggggattg      120
atggacgaga tcgattggaa cgatagatga tcggtatcaa ggggtgcacga ggcatgggaa      180
aaaccacatt cctcctgact atgcacgcga aaacttcggg ataggcaata gaaaatgcct      240
gtatacaatc tgaatcaact ctatttcacc acagaatctt tgggtgaactt cgccgtgagt      300
ttgtcaagca aggaggagag gtactgctac ttgaccaagt attaaatata ccaattgggtc      360
tatagagctg cgtcagtgtg tggagctata ccggacttac gcattgtctt tacgggggtct      420
acgggtgatgc gcctgaaaga aaaaatcccc agctgaacgg actgggttaca tcgtacgttc      480
tgaacggttt tcattccgcg aattttctcaa tctcaaaaca gggctgtcgc ttcagccttc      540
agcttcgatg agattgtatc caaccacgaa cagatagctc cgcgaatctc gaggcaggta      600
accctctcga ctgggtttcag gactatcttc accatggtag taccatcatat tcctggagga      660
taagaactat tcggagagtc tgctgaaacg ctcaatatga cgcttgaagt agatgtgctt      720
ttcatccgac agatcagcag cgattcctgc acaaactgcg caagctactc tacctactgg      780
gacacgtgct cccggctcgc tcaatatatc gagcattgcg aaggaagtgg acattctcgt      840
acgacgataa ccaactatct gaagtacctg tccgaagcca gatgatcaag gagcttcacc      900
gcgaagagga gacgggtgcc aagaagccgg catgatctat ctggacaata ccaatgtggg      960
atacgtaatc cagccggaac tctcaactat atagacgtac tcaaaacatt cttcctcaat     1020
cagggtcaagg tcgcaacgaa gtatgtttgg gatctcgctc tcaaactcga ttctgcgtaa     1080
tcgccaatat cagttctgca tcgatgagaa gatgagccgt cgctacaacc cgaccgctac     1140
tatgccatcc agaacatgcg cagcggtagc cgcaactgat cccctctctg ctcttcggat     1200
tctgtacta aaaaaacagg acaacaactg tgaaagccga tcggggcggt cggcttgtcc     1260
tcactttgct atgatcctta gtgagcagac aaagaatatg gacaaagccg atgcatccgc     1320
aacaccgact ctgtttcagg gtttgctatt tccagaatac aagaccgaaa ttttactttt     1380
tataactaaa aaccaaaatg gctaaagaaa aaaaatccct acttgtga      1428

```

(2) INFORMATION FOR SEQ ID NO:745

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 463 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...463

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:745

```

gaaataacat ttccaaatgg agaactgatt aaggacaaaa agatccggag gaagattata      60
agatgaaatt caagaatcta atttatactg ttccagaaac agaaagcacc tatcttacca      120

```


aacaaaatct	ttcgatacaa	aaaagaagat	gagcctatgc	aaagatgagg	atcatgattt	180
gtgcgaagat	gatacgacga	acatcgaaa	cggatacacg	gtggcgtaga	ccacagaggg	240
tccgtacctt	tgagctggct	attcacatag	tcgagagcca	tcggattggc	cgtattccgc	300
atatcatacc	ggctgtgcca	tcgtacctgt	tgcgagagcaa	cttatagaag	cccaaccgac	360
caatagcgta	ggaagcatcg	taatcaaaaa	gccgctccga	cccaaagcag	accgtcccca	420
tggataatgg	tatcaaagaa	atggctcact	ggccaatcca	gtc		463

(2) INFORMATION FOR SEQ ID NO:746

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 632 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...632

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:746

gcattacccc	ctttcagaaa	aaagtactcg	ctcggataga	taaccgacca	tcgaaataac	60
ctccgacatt	caattgatag	aacagtgcag	atgccggtaa	aagacaagcc	gctgctgtat	120
gctcaaatcg	aggtggtgga	aacgtgctcg	gacttacgcc	ccatcccgaa	agctccgcga	180
taagagagag	aaaggacgga	gcacgtatgc	cctcaccctc	acgaatgaga	aatccatccg	240
ccgtaaacgg	taataaggac	gcggattgaa	tgctcatctta	gctcgctactt	ccagaatcgg	300
tgatgaggaa	ctatgcgagg	aagatcggga	tcggcattgc	tgaattcaga	atatcggtaa	360
tactgccacc	gaagagactc	cacgtctctc	cagcggcaaa	ggattgogct	cggccagcat	420
cacgcttgtc	tccacattga	gttgggcaat	aggtcgatac	tattggtcag	acggacaaat	480
ttatcatcgt	gcgagttgtc	gggccttgtc	cgttgagcag	ctccatcctc	agatcggtcg	540
ttggtctatt	ctttcgcgcg	tgctgtacaa	atcgaaagag	cgatgtccgc	ggataattgc	600
aaaagccctc	tttgcggagg	agaatagtag	ag			632

(2) INFORMATION FOR SEQ ID NO:747

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 569 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature
(B) LOCATION 1...569

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:747

tgogaatatg aacaaagaaa tcaacttttga taagctaccc gaagcgggtac gtatctgacc	60
gaacaggtct ccgccattaa agaaatggta tcagcattca ccctcctgtg cctgaagaaa	120
aatctctcat aggcataagac gaagcgtcgt aattattcag aaagctaaac ctaccatcta	180
tgttttggtg cgcaaggaat tgtccctgca tataagcgtg gcaagaaact ctactttctac	240
aaagagagtt actacaatgg gtagagtctg gacgaaaggg tgcaactaca gccaatcatn	300
tgaggagcaa ctggccatga tgcgtcaaga ggtgcgtcgt aaacgaaatc tatcaagtaa	360
cgatgggcca tggaagaaga agctatcgtt ccnaagtcct tcttgacaaa gcaatngagt	420
tgggcttgtc gttcacgggt tgacctttcc tatcagcata tttccctctg agatacgaaa	480
catcattgca aggtacatga gtgccaaggt tttcccatcg attacatcgc ctctgncatc	540
tngtggcaat tgctgtgggg ataggaat	569

(2) INFORMATION FOR SEQ ID NO:748

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 521 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature
(B) LOCATION 1...521

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:748

ggataagaaa tcttttcagg aatattatgc caccggcttt agccattgca tggttgtggc	60
acatcgaaac agcacgggtct gcacgtaaag agttattggc ggaagagcat ccgatgaga	120
cggtagcagt atttcgccc cgattcaatc atacgggagg attccccggc tttgtctatg	180
gagggctgat tgccgcatcc ttgactgcca tggcaatggt accgcagccg ctgcaggtta	240
tcgtttcaaa gtcgcccgat ggattcggag ccgaatctga gataccgtga cagcaatctg	300
aatctcaact atcgccgtcc taccctgatg ggagtagact tgggctacgc gcccatatca	360
aagaggtaac ggaccggaaa gtactgatgg agtatcgctc attgcagaag ggcaggtaac	420
ggtggaagg agcatgctat cgtcctgctg cccgaaaaga agtatgcaa gcaaacggag	480
agggcaggat taaaacgcgc tttgcgactc aagcatagac g	521

(2) INFORMATION FOR SEQ ID NO:749

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 991 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...991

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:749

```

cacacctgtg gccaatctcg acccagtact gatatccggt acggtcgtgg acgcgccagc      60
ttgcataatg ctgattttat tgcggagaaa gaccttcaga gggagacttt gtctatgtgg      120
aaaagggtgg agagatcatt cccaagaagt ggggtgtggat acggatgcac gcagtatcga      180
tggcagacct atagttttac agtgctctgt ccagactgtg ctacaccatt ggtacgcgaa      240
caggggaagc tgcctattat tgcccgaatg ccgagggtcg cccacagcag cagaaggacg      300
gctcgaacac tattcgcgac gcaagacggc agacatcaat atcgcccgga gacgatcgaa      360
ttgctttata gccgcaatat gattcgtaac gtgctgactt ttatgccctt acggaagagc      420
agctactcac tctgcccggc tcaaaaaacg ggctgctgcc aaacttttgg acagtatcga      480
agcctccaaa cccgtccgta tcaggccatt ttgttcggat taggtattcg ctttgtcggg      540
aaaccgtagc caagaaactt gctgcggtct atccttctat cgatgcccgg ctgctgcgac      600
gagcgaggaa ttagtacaga tagacgagat cggggaagaa tagctgctgc tgtacttcat      660
tttttcagcc ttcggcagaa cagggtatga tcgaacgact tcgtttggcc ggtgtatcgt      720
tggaagctga gacagttccg tggcggtttc caatcgttta gccggaaaaa cggttggtat      780
cagtgtacat ttgaaaagcg tagtcgtgat gagtacaaa gctatggtag aggcaatggc      840
ggacgtatgg cccggatcgg gtttcgtcca agaacttctt tcttcttgcc gggatcggat      900
attggggccc gaagttagag agagaaagct ggaagctcgg tgtgccggct gatgagtga      960
gaaggatttc ttccgctgat gaagaatagg t                                     991

```

(2) INFORMATION FOR SEQ ID NO:750

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 983 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...983

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:750

```

tggaaaacgg gattctatcg catcgccgta ggagccggag tgcctattcg ctgcgtgtga      60
tcgactatag ctataaagaa atgagcgtat tcgagctgtc acccctacgg gcaatgaaga      120
agcggatatt gcctacatca gaagtcgtac agggcatcac aggcacggca cccccgaaac      180
tttgcagaat cagaaaaatga tcaaacacga gagctctcag ccattgagag ttgctgtagc      240
tcaatccgga tagactggga ggataagcac gccaatctac gccgaatgga gcgttgccg      300
aagaaacagc cggtatggcg gatgtcctct tctttcccga aatatgacta cgggcttttc      360
gatgaacgta caagctctgg cggagccttt cgagagggcg aaactatcat gagcctgaag      420
agagtgactg ctgcgtcatgg ttggctctgt cggctacgat ggccgtacgg gagaacggga      480

```

```

aattctataa cgtgcctatt tcgtgacacc ggaaggagag gtcttccatc aggacaagag 540
cacctcttcc gtgtaggggg agagcatgag gtgatgactc cggcacaaaa cgccggatct 600
tcaactatcg cggttggaag atcttcatca ttccctgtat gatctgcgtt ttcccgctctg 660
gtgtaccaat acggatcttg aatacgtctg ctctgtctgca tggccaactg gcctgagccg 720
cgtcgcgccg tctggaaacg ctactccaag ctctgtccat ggagaactat gcctatgtgt 780
gcggtatcaat cgggtggggg aggacgggat cggctctgcgc tatacgggcg attggctatc 840
ctttcgctc ggggcgagta tcttgccact tgtgccgaa gggaggaaaa ggtggctgta 900
ccatacgctc gataaggggg cgatgcaacg tttcgcgaca agtccttgcg tggatggata 960
tggactcttc gtcatcaact tga 983

```

(2) INFORMATION FOR SEQ ID NO:751

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 600 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...600

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:751

```

ggaagcagtt ggaggacatg cagggataag ggctgtggaa atgatgaaat ccgctttgac 60
aagcggcttg atgagaacac gatgaagggtg tattgtatga ttatcatatt attgaaaaag 120
tactcatcaa ttcatacaga atttcatact ccgacttcgg tgggaaacgg cagtggcatt 180
acaggcgga aacggaaaggc agaacacgct gatataagca gtagaaaagg tagtcacggc 240
aagcctgcat tctgtatttc caagtatgca ggggggttcag acattcgggt gcagccaagt 300
atgccttcgg agaaacaagt ccaatcggca gcaccgatgg agagccgtgg ggacttcaga 360
atacaaggga aagaagtggc tggggcaaat gccacgtggt aagcacggta cggatatattt 420
caaaagagaa aataccgtag ccattagggg attttntcga cgcttcaactc cgtgtccgnt 480
gaaaatctcc aataagccaa cgggggttgca cccctctgga caccctgcc gagcctgttg 540
catgaaggaa cgggcaagct gaaacaagtt tcattttccc tctcaccgta aaatcaggaa 600

```

(2) INFORMATION FOR SEQ ID NO:752

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 556 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...556

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:752

```

gggaacaagc gagttctcat cacgggagca acgggcttca tcggcggtt ctgggtcgatg      60
aagccctgcg ccgtcaatat gaagtgtggg cggtgtggt cccacacagc atcgctcacg      120
cctgacagac agccgatcc gatttgtgag atcgactacc gcgaccgctc cgatattgct      180
cgcttggctg ataagaagct cccgaagggtg aatnccgatg gcacttggtt atccacaacg      240
ccggttaacc aaagctcgtg acacctcgtt ttttagagag atcaatgcag agcaaccaag      300
cgttttctga taggattaca aggggcgaag cactgccccg aacctttgtc ctgatgagca      360
gtatgggtag ctatggagct cctnccgacg acgccaacca ctttcctcct cttccgtacc      420
caaacctacg actgcctatg ggagagcaag ttgctggcgg agcaatatgt gcaaaccctt      480
gtnacaatac ctataccata atacaacca caggagtcta tggacctcat gaccaagaca      540
tctgatggca atccgc

```

(2) INFORMATION FOR SEQ ID NO:753

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 473 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...473

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:753

```

gctcaaaaag ctcaacaact accgatacga gggatacgcc atcggtgcag tctgacctat      60
ggctatcagt ggctgctggg caaaagatgg aacttgagac atcgatcagc ggaggattcg      120
tccacttcga ttatgacaaa ttcgaattgc caagtgcggc aaaaagatcg cggaaggcaa      180
gaacgactac ttcggttgac gaaagccaca ctttcgctca tatacatcat taagtaatac      240
cttattatac agacaagcta tatgaaacag agtcgctata tcctcctgtc gttttcttcg      300
gaatgtctac gcttgccgtg acaggccaga cccatctcgg gggattaagg tgagcgagaa      360
gcacgtggtc aagaaaacgg gacataccgt cacgtaaaga tngacctga tcttgacggc      420
cataccgat atgaacagca actgctgatg gtgggtncce ccattattcg ntc

```

(2) INFORMATION FOR SEQ ID NO:754

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 990 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...990

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:754

```

cggccttcgg gaatcgctt actcattccc cggtaaaacg ctccgcctga agaggatgac      60
cggccggtaa agtggcagtc gtatcctgcg caagggcttc gctccgatag tcgtaagcag      120
gacagccgat aaagtccatt ttttcataatc gtcgatagat tgattgtttt actttgtctg      180
tactaaaaag agtcggaccc gcctttgagc gtcactttta cggtgccgag tttcttttgc      240
aggagtgact cgtccctgc atcacccgc gggccgcttc ggaaaggatc tggttttggc      300
ggaggaagca aaggtgaacg aagtcccgac cgttcctccc atatggctcc cacttcttcc      360
agcgcggaga cctcttccga tccgggaata aaactccttc ctgtccgtcc gtatcgaagg      420
cggagagctg aacggaaaacg accgtccgcc atactcgata ctggtgatat gaagcttcat      480
ccggttgccg cgattcgggc ctgtgccatc agtcgggtat gacggggaat ggaaaggctc      540
gcaggcgagc ggactccagc agacggagtt gtacgaagtc tccatgctca ggggtggtgt      600
cctgtccacg accacccgca acgtattacg ggtgacgacg atgccggcac gtcggcagac      660
cggaaaccga agtttcgctc cttatgccgt actcggcgat aaaagccgaa tcgctcatgg      720
gctgatccag agacgaacga ttgctttctt ctccggaaga agctccacag cgggtaaagc      780
cgccgttctg ctgtcaccgc tgtcttgggt gcgggagcat cggccggggc gttctgactc      840
cgggtgtatg catcccgga atttgcatca ccggaggccg ggagtatttg gctgccatcc      900
ggtaagattt ttcgagcagt tcgagatgat catctcctcc tctttttcct cctgaagagg      960
tgcgagttcg gagcgtatca gtccagctct

```

(2) INFORMATION FOR SEQ ID NO:755

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 559 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...559

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:755

```

cagctgttca ggtgaagttc agcagaatag tgtgcaagag tatagaattt agagattatg      60
ggttcggata tgtgataacg aggattcatc gttaagttat ccggttttat agtcttgagc      120
gttttggtgt tnatagtctt tctttcgcgt ttttagaatc aatttaatat taatcctttt      180
aaacatttgg cttatgagtt aaacaaaatg tttttggctg gagcattgct ctcatgggac      240
tttgctcttg tagtaaagag ggcaatgggc ccgatccgga caatgcggcg aagtgtatat      300
gtctatgaca ttgtccatgc ctatgggaag tgctcgtgcg ggtacggaca ggatcaagct      360

```

aaccctgact accattatgt aggagagtgg gcggaaga caaaattgag aaagtgagca	420
tctacatggg gcctcagggt gccctgggct tgtggagagt gctgaagatc ttgatttttg	480
tacatattat aaaatcctac tatagatcct gcaaccacac atgccatttt gaaacattat	540
gtcctaaaag ctatttttg	559

(2) INFORMATION FOR SEQ ID NO:756

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 527 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...527

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:756

ggcagcaatg cgactcgata attagcccggt cgaaattcat ttncatggct gctggctgac	60
ggattcgatc cgatctctct gtcccgtaat atgactcgat cacaaggat ggtaacgaa	120
ggaaaacgtc ttttcaaata gaagggatct gccaatgtgg aggattgca aacgtcttgg	180
tcgcataggt actgaacctc tatggatggc tccgatctgt cgaactccgg actgccgaag	240
ccgttttagg ctctgtcca cagatccaaa tcgggactga tcggattctt gacgggacaa	300
tcaccgatc gtccttgcc atcgtatcgg caatttcttg tacgcaaagg gattggatgt	360
ggttcgtgca cctaaccaga gtattctgat acggcttgca tggcttgctc tacgtgttcg	420
cgagtagcca cttccgtggg acaagcatat ccaattcatc ctgtacacgc accaaccaag	480
gtagccctgt tctnctactn cttcgaagca ccccggaag gtacgag	527

(2) INFORMATION FOR SEQ ID NO:757

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 427 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...427

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:757

cggatnaagc	cgccgattag	gattaacgcc	gaagactgca	aagcaaaatc	gaattaacgg	60
ctcccggtg	ccaacccatt	tccgggacag	gccactgttt	tctgtttgct	gcttttttcc	120
gtactttgaa	ctgtattttg	gaacaaaaat	attccgttgg	catncaacta	aagaattttc	180
atcataaata	tcccgtctct	tccacctgat	tttgatgact	ttggcttcag	ggcttatcct	240
catggtatct	tgttcggact	ggatattttac	acgagacacg	acagctctat	cgtgtgccgg	300
agttgcgtgg	caaagacttg	aaggangcag	ancgtttgct	gtcaaccata	atcttcgcta	360
caaacttgtc	gattccgttt	atgacaaatc	ctggctccgg	gtgtcntant	nnaaatgggt	420
ccncaga						427

(2) INFORMATION FOR SEQ ID NO:758

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 451 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...451

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:758

gacaacaatc	cgtacgaaga	gagattcgaa	gttgatgtag	atggagccag	ctcaccgtat	60
tcccggccaa	aaaagggtcag	gaaatagtg	gttacgctta	gaaagctata	cagacaaggg	120
cttttagcgt	aagttcactg	tgatgtagga	ttcgatatgg	atggcaaaat	ccacgacttc	180
tccgtgctca	gccacacgaa	acacccggtc	tgggagccaa	gatgcaagag	tggttccgaa	240
cgccgccaaa	aaagaaggac	tgatccaaga	tgtacgtggt	gtacagatga	gtgaactcct	300
ctgactgttt	ccaaagacgg	cggatcaagt	gatgctatca	cagcgcgacg	atcagtagcc	360
cgagcctttt	tggatgcaat	ggatcggtgc	taagagggtt	caaagccgct	caaggcagtg	420
cccggacagg	ctcaggagtc	ttcagggcag	c			451

(2) INFORMATION FOR SEQ ID NO:759

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 458 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...458

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:759

taaaaggact	cttaaggac	gactaaatat	gcttttcaat	acgcccattgt	ctttctctat	60
tgtttcccaa	gaatgaagct	tatatattccc	tgaaaacgat	cttggacatc	ttcaaacaaa	120
tactttctgat	tagctttgag	gctaagatat	agtcggcctc	tgattgaata	atcacttcag	180
caatagctgt	ttgtatccca	ttgcatcaat	actaacaact	gatccactta	aatcaagact	240
atccgtactt	cgggaatagc	ttgtaattca	ttgtgtttgt	ctgtaactgt	ctctgacaag	300
acttaagctc	acttgatcaa	tccatgccga	gagtatatat	gtaacccagt	cttctttggg	360
agctacgcaa	acgcttgcca	tctatggcaa	tagtttaccc	tctaaatcgc	taatcaagtc	420
ttttccataa	acactgagac	agcgtaaaga	gcaatgan			458

(2) INFORMATION FOR SEQ ID NO:760

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 778 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...778

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:760

ggtcttccga	atacattaat	aggatgtaat	aacggaggat	cagggataat	aattgataaa	60
agcttggtga	agagaaaaaa	aatgccttac	tttgcaaccg	attatgaccg	ctttatgatg	120
ctacaagcag	tcctaacgaa	ctggaacata	ataaactaat	aacgaaatag	caatgtcaaa	180
gatttgctcag	attaccgcaa	aaaggcaatg	gttggaacaa	acgtttctca	ctccaagaga	240
aggacaaacg	agtattcgat	gtcaacttgt	tcagaaagaa	gttctattgg	gtagacagga	300
ttgctggggt	gttttgagga	tatcggtgc	cgggctgcgc	ctctcaacaa	aatcgggtctc	360
gacgctgcca	tcaagcgcg	ggccgagaag	ggttcttaaa	cgcataatca	agggagaatt	420
ctgtcatggc	aaagaaagta	aaggcaatcg	ggtgcagggt	atccttgaat	gcaccgagca	480
taaggagagt	gtatgccggg	tatttctcgt	tacatcacca	ccaagaatag	aaaaaataca	540
ctcagcgctc	ggaactcaag	aagtacaacc	ccatcctgag	acgtatgacc	ttcataagga	600
aatcaaataa	taaagaggag	atcagacaat	ggcaaaaaat	cggttgcaac	atttaagaaa	660
ggtgatggcc	gtacctactc	caaggatatca	agatgggtcaa	gtctcctaag	acgggtgcct	720
ataccttcca	ggaagaatgg	tcccgaacga	agctgtaaaa	gacttcttta	agtaaggt	778

(2) INFORMATION FOR SEQ ID NO:761

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1804 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1804

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:761

```

cagtcgaacg agttgtggga gaaatctgct gctgcgtttt cgggaaagat gctttcagcc      60
tgctgctttc cactcggagg ccggtttgca aagaatacga tccttacgat agttgtagcc      120
ggcataggct gctccgatgt attgatctgg cggaactttc cgttcgacgg attctgtgca      180
tatagagagc cgggctccac ggagcatctt cggatggtcg tatctcatag agaggatcgc      240
tcgtgcatga cgatagatgt acttcagccc tgcctccaaa gaatgtgctt gtccaagggg      300
cgtgtatagt ccacttggtg cgtatgttcg tccatgcccg catggatttg gagtgtcggc      360
cggcgctactg gatcgtatta gctgtgttga gcgatgcgc ttccattggt caatgaaggt      420
ctcgtctatta ttaggattgt ggtgaagcgg taggaaacgg tgagcaattc gcccggcagg      480
cgagtgtctgt ctgatagtcg gcattgagct cgtatgatcc ggcatccatc tgtgttttgg      540
ttttctgtct atgtaggaca tgaggttgcg gccggcaaaag cttttttcac gctgttccgg      600
tcggtggtea tctcccaaag gcgtacattg ccgccacgt aaagagattg agcgaatcta      660
tctcgaatga gaggagggca ttgccagtg tccgcaaaag gtttcttgcc ctttgccctc      720
ttctatcggt tggagatgga tgtagtacgt tcggtaaagt agcgagagcc cttgtttttg      780
ccacgtagta gttatagttg gtagtcagcc cgactttgcc ggactttgcc gtogaaagat      840
actaccgttg gctgtgggat tgttgctgac actggccgtg atgaacctga atatccttcc      900
agcttcttac cttcttccgt gacgatgtcc agatggcact tgtgccttcc gcatcgtact      960
ttacaccggg atcggtgatg cctccaccgg tttgatcgta tgggcaggaa tggagcgaaa     1020
gacctccttg ggttgctgct cccatggctc gagggcctgc cattgaggtg gattttgagt     1080
tggaagatcc tttcacctgg atattgcctc gaccatccac cgttaccaag gaacgttgcg      1140
cagcatttcg agcaggttgt tcgtcttggc tgcgggtcat ctttcatatt ataggacagg      1200
cggctctatc ccatcttcac cagtgtcgtg ctgccgatac ggtgacggtg gagagtgtgt      1260
tgtcctcgga ttcggagaaa tgcgatgga tttgatgtcg tgctgtccat tccccgact      1320
aattgcatgg tatgggtttt catacctacg aacgaagctg tcaggtgata gggggagctg      1380
ccggcaggcc tatgacgaag tagccgttgc cgtcagtcac tgcggaaca cctgtgtggt      1440
atctgtcctt gtcagccgga tgcttacagt gcatagggca ctggttcgcc ggaggaggca      1500
tccttgatcg taccggatag tgtacatcga gggattgtt ctgtgccatc aaagaaagta      1560
tggacagacg aacaggaaaag atgataaaac gattcgtttc attgcttggg tgattgtggt      1620
ttattgtgta tgtatcggct gttacctgtg gcaaacactt taagttattg cttgtgaata      1680
gtctgtagtc gaaccccttt cctttatcag aatgccgaaa agaaggggta ggagagaggg      1740
agtcttccgc tccgccccca ttggggcgac tcgcgcaatg ccgcaacggg agcggataag      1800
aagg                                              1804

```

(2) INFORMATION FOR SEQ ID NO:762

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 650 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...650

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:762

```

agagttttatc atcaacctgc aaacctgaca ctctccatta tcctttgogc aataatgaga      60
tagccattct tgcactacc gaaatatcat ttgagaaaca catatcgctt gacaaaactt      120
atccatattg ccagttgatt ctcaatatat agctctcagt gtccgagagc atttgtagaa      180
gttccttttt cgttatattt atctctattt atcttcattc gtatcggata atatttgctc      240
ataaatcaac accctaattg caaacatata atacattcag aaaactttgt gtttacttac      300
aaactaaatt ggttttgaca aggaggttta tatctccttg tgaagacagt tatattattt      360
ctttgtattt atcatactta ttcccagtggt ttatacacat tctctaaaca ttgacgaaca      420
aaattgaggt tctcatgcga gagtttaact ctgagaagag cagctgttga aaaccttgaa      480
taatctcatt cttaaagggc catttttgaa tatattaatg aatatatttt ttatctcaac      540
tctttttgat tagtatcaag ttgtgtttgt acaatcatat ccactaattt acacatggca      600
tagcagaaac catactggat attttctaag caattagata ataattatct      650

```

(2) INFORMATION FOR SEQ ID NO:763

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 543 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...543

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:763

```

tgctcaacaa agcagccaaa gctcgtatcg accagtatac caaaactgcg gtatcggtta      60
cgaattgcta tataccgagc taaccattta tttctcagtg gacgtgtctg ctcatccaac      120
gacaagcaag tgcatagcgt actggagggt caggcgctcaa acgcaagtct tttgcaggag      180
ctaccgagtg gtattctgcg acttagcaac cgtcaagcgt gccatctcag ccatcaagga      240
gggcaggata gcttgggggc aagcgaagtg acgctatctg acaaccccat tatttgcgctc      300
ctgagcagaa agaagccatc gagcgcacgc tcaagcagtt ccgaaaggaa ataagatgct      360
gtggaatgcc aagatgcgtt ttggcaaaac gccgtgtgcc tgcgtgttgc caaagagatg      420
gaagctgtgc gtacgattat ctcacgcatt gcccggtggt agatgccagc tgggttgagg      480
actttggtaa acctntnacg accgtcctga gtggcactat ggctcccgta gcaaagggtg      540
agc

```

(2) INFORMATION FOR SEQ ID NO:764

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1074 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1074

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:764

```

cggtgccggt atcgggttga cgatggcaca agcgtgtcaa gatgatacaa tgcctcagat      60
ggtgcccttg cttaacggtg tcggaggggc tgcntccgct tcgtggggat tttgtctctc      120
gcagctatag gaatcaatcc gaataatata cggctgccga ctatccgata ttttcgcaag      180
ctaccggtat gctggcctga ctgtcgggtat gattaccctc ataggtagcc ttatcgccgc      240
cggtagctac acaaactact gcctcagaga ccggtgatat ggcctaacca ctcgtgttta      300
cctctttgct actgacctg accgtgggat tcgtggtgct cggctctgtt ctatcgaagg      360
gtttcccctc ttctgggcta tcatcggagg acgtttttct cctctctctt cggtttgttc      420
ttctctatcc gtgtcgggtg acggatatgc ctattaccat ttcgctactg aactccctta      480
gcggtgtggc ggagccattg ccggtatggc tgtgggcgat attctactcg tagccgtaga      540
ggtattgtcg gtgccagtgg tctgttgctg acgcagatta tgtgccgccc atgaaccgca      600
agctcatgtc cattctgatg gcttcgggag caaaagcaca cctgccgcta caacgccgac      660
tactgcttca aaacaagaaa aaggagggtt gccgctcctg ctcccgccaa agcagagaag      720
acagccggta gcgtatgcgc gatgccaagc gagtcacatc cgtaccggtg tacggtatgg      780
cattgctcag gcacagcacc aagtaagaca gctggccgat aaacttacgg ctacggtacg      840
gaagttcgct atgccatcca tccggtggcg ggtcgtatgc ccgacacatg aacgtgcttc      900
tgtgcgaagc cgatgtgccc tatgaccaac ttctcgagatg gatgccatca acggagactt      960
cgctcagacg gatgccgtgg agtaatcggg gccaacgcag taatgaacct tgctgctcgc     1020
aatgctgaag tacgcctata tacggtatgc ccgtgctgaa cgtggactat gctc         1074

```

(2) INFORMATION FOR SEQ ID NO:765

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 529 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...529

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:765

```

agaggctcta ccttttcatg ctacagactt ttctgccact cctgctgata cttttgccat      60
ctgttggttt gtggttttga tgcagtttct gtggaaattg tggacgacat ggtcggcaaa      120

```

```

ggactgagtg ccatcatctt gtccaagtgc ttttctacgc agccatgacc ttggttccca 180
tggcactccc gctgggggtcc tgttggcctc attgatgacc ttcggaatt tgggcgaacg 240
cttggattgc tcgccaatgaa gtcggccgga gtaccgctct accgcatcat gaaactcttt 300
tcttctctgt ggtagccatt gcttgcgggc ttttcatctt tcaaacgato tgatgatcca 360
gtcccaagtg aaattctaca cgatcctgtt tttgcgagaa gggcgactcc ggaactggaa 420
attcccgaag gttctttcta catggtattc cgtgggtaca atctctttgt agccaagaaa 480
gatcgccgca gggaatgctc cacgacatga tgatctatga ccactcttc 529

```

(2) INFORMATION FOR SEQ ID NO:766

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 654 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...654

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:766

```

acaataaacg cttctcctat aatgagcaag ccaataaagt ggaggaggag tactgggaag 60
attcgttcag tatccgctca aattggcttg ggcgatcagg tacacaagag ccagggactg 120
acgttcgato gtgtgatcat cgatttcggg aaggcacctt tgccggcggt caggcctatg 180
tagctctcag ccggtgcgtt cgctcgaagg tatggtgctg cgtgcaccgc ttgccggtcg 240
ggatggatcg tccgtcgtga gatcatcgat ttttattcgc gagccaatga tttgagatca 300
tcaatggctc actcctgcgt gccgaagcag aacgcgagta tgccaagccc tccgactgtg 360
gaatgctcgc cattatacgg aagccatcgg tgcttttcgc aggcattagc gaggaagaac 420
gaatggacga cccgctnttt ctgctgctg tgagtaagct gtcgaatgga gtacgcacgc 480
cgtcgcgagg agagctgcgn gcgagtggcc gagcaacgcg aggtatgcgt cggctggcca 540
gaatatgtgc tgatgggcaa tgactgnatc acagagctca tgatgccctg ctgctattcg 600
ctgctacgac angcctacgc tctaccccga ctatgtggcc tagtcaggaa aggc 654

```

(2) INFORMATION FOR SEQ ID NO:767

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 550 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...550

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:767

```

cggcctccgg acagtaaaat gaaacaatag atatgatgga aagcgatgaa taaaaagcat      60
tcaagaaaac ctcaaagata ttcagggggg gttatcgga  tacatggttt tatgagagac      120
ctgaaaaaag attacagccc ggtggataaa gcatcagtct ggattcgagt atgctcgcca      180
tgcttttgaa tgtctcccta ctactgttta ccgatggaga gcaaggaatg agttgcccta      240
cacgatctga gcagcggagc atgtgcctat cgattcgga  nagtgtacgt ggccctcaaat      300
gtggccggtt aagagcccg  ggattcaatc ggatagaggc attaggactt tatccgtcta      360
tcgggacggt atcatagagg gtggtggttt tgagcaaagg aaaaagaccc tngattcata      420
tcaaggaaca aatactggga agaacggatg aagggttgn  ttgtattcaa ctactatatg      480
ccttttcctt caagcccgaa gaagaaattt caaaacccgc tctacgaaga caaacgagct      540
tcctgtgata                                     550

```

(2) INFORMATION FOR SEQ ID NO:768

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 343 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...343

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:768

```

agctgaccgg gtagcttccg aggtatggga ccggcaaaag cagtcaccgg gatggcagca      60
atggaactgt cccgccgtat cccttcgcaa gagatgcccg cagagaatcc attaccgata      120
gtcgaatggc ctatogaact ataagccatt tctcacagac ctgccgcagg aagaaatgtg      180
ggtgttactc ctcaacaaag cggaaagata atcagcatgg agaaccttan ccgangaggt      240
gtatcgagac ttcggccgat gtccgtctga tcatgcacaa agccgtctct catctgcctc      300
ggcnatcatt ctggcacnca atcatccttc angaacggta cgc                          343

```

(2) INFORMATION FOR SEQ ID NO:769

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 397 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...397

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:769

```

gcgaatagggc ctgacaacac cgtagccata taggctatca gcacggtgaa agaagcatcc      60
tgccggcacc tttcccgatg tcggcaatag ccaccgtccc aatccgagga taatcagcgg      120
aatggagaag ccgagcagtt cgctgaaaga gcattgaacg tgacgaagat ccgaataaac      180
gggaagctga agaggtgccg aagccgatac cgaggacaat ggccaatatg atcttgggca      240
agaggcgatc cgtagtttac gcatatgggtt ggggggttgc tgaatcaagaa gatttttgtt      300
ggaaatatag cggaagttag catccagcag acgacgggca gcgcgaaact cctggcacga      360
tcttccaaca cgtctcttcg actccggtat gactctg

```

(2) INFORMATION FOR SEQ ID NO:770

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1080 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1080

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:770

```

atgggttgcc cgtttctaag agatatTTTT tcgtcgtggg tagtgtaact acatatgaaa      60
cgcgccagaat gtagtcaccc tcctgtgacg ttttcagggtg aacaaccctt tttcattagt      120
ggcacctgcg gcaacggcta cttggccgta ctctgtacaa gctgtacgtt ggcttgaatc      180
atggggttgc cttcttgtcc aatactctac ctgctactcc ggcttggttg gcttccagcc      240
cgacgaacca agagaagcaa ggagtattga caacagtaat tgataaatcg atcgataaga      300
aaagtttgaa aagaaaaata ggtgctatcg ttcccattct ccgaatggta ttttaagatt      360
taccctacna ctgaaataga gaggaanaaa gaataagttt aaaagaccat gtcgattttc      420
cacattcgga cctccccgca atgtcgggaa acggcgacaa gtatcaagga gcaagtcgga      480
tggcattctt tttggtatta tttgcctcaa gggagcaaac atgtatctat tctatatatt      540
ccgctcatgg aaaaagggtg agaaattccg tcgaaaagta gtcgcttaag agaaatcacg      600
aacgaaaaat gatgagattg cggtgcgatt tttggggaaa tacgcgccta aattttttcg      660
ttttggttcg taattttttg acttctgcgc caaaacgaaa aattttctgc gccacgtttt      720
tacgatccac gcgcggcatt ttttcagacg taaaaacgtc ggagagggaa atgccctcca      780
tctgtgtttt ttcgttcccc cagtggagga aaagctcgga tggaagagcc ttcggaacaca      840
gacccgggga gccgtctttc tccaaaaaca cgtatctttc gggatttttag ctgcaaccgc      900
ccgattatta tgaagcattt tttcagtgtc aacgcggttt cgtgccacce tataagaagt      960
atgtggcatg gagcgtgggt ccaatacgct gagtgcactg ctcaacctat tgtctttctc      1020
tctgatcatc ccactctgcg tatcctcttc aggatagacc ggcagggtgac caottacagc
1080

```

(2) INFORMATION FOR SEQ ID NO:771

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 576 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...576

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:771

```

caggaaaggc catcggtatan ccgggccgta tcgaggacat agcgagtata cccgtactgc      60
tgtcgggtatt gagatacatg aagtttgcc tccaagcgatc ttttgatagc tcacatagct      120
cttgccgaaa agataggcac gatttcttcc gagcaaaacg atggaatcgg cagcttcgta      180
ctcccactat atcttcaatt cgaattcatc gtcatacacg gctatcttgc cgcacgcgac      240
cgggtgaatc ggcaggaagg gaatctcgaa aagcactgtc aggaatagg tttggagagg      300
caccgtgtct ttcgctgtag aatcagacag cgcagcatgc cgagggtggg caatccgact      360
gtccgggcca taggacgttc cgcagcgacc aagtagcaca gagcaatccg acaaggatta      420
cgggtaataa ccatgaaagt cggaacagag atcggatact ctcattegga ttcattcata      480
ctcacagggt gcaaaggtaa aaaagaagtt gtaatacacg atgaggttgt acaggctgcc      540
cggggccgac gcattaaatt ggtttgcggc ttcatt                                576

```

(2) INFORMATION FOR SEQ ID NO:772

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 376 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...376

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:772

```

taatttcttt tcatggcatg tggggagatc ttactcccca taataagccg gatcggtcgg      60
tagttttctc tttcccgaaa atactatccc catgaatcta catggtacat ggaagggagc      120
ataggctctg agaatatctt ccggctctgc gcatcgaata ctcccgacgc ttcaccaaat      180

```


tacaaacgac	tccgaaaaat	ggggagtcg	tgctcgcttc	cagatcactt	tctgacctct	240
aaaggaagag	gaaatgccga	aacttttcgt	tctgacattt	cctcctcttc	gaaggattct	300
taatagaatc	agagcttgat	gaacgttcgg	ccggtgttgc	tgcttgaant	catgagtttg	360
atcacatagg	cccccg					376

(2) INFORMATION FOR SEQ ID NO:773

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 854 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...854

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:773

ggatcttgcc	gacgaaagtg	gcctgcttct	gttctatgat	ctcgatcacg	cggcttccgg	60
cgcgcgacca	cgacgttttg	caaagagttg	tactttcatt	tgtcaccgtc	catggcatgt	120
gccgaatttc	tttcggcaat	gaaaatggcg	ttccgcccc	ttcggaata	aacgaattgc	180
ggccattgaa	ccgacgtcaa	aagtgcctat	gacaatcaat	cccaaggcat	tgtaccgata	240
gcgtcgcgct	ctatctcatg	caggatgtca	tccacagcca	tgtcttccat	caggagttca	300
ccattagctt	ttgtggtgca	gcttctactc	ccatcagatg	gctacctgct	tgtagttcat	360
cacgctctga	ggattgcttt	ggaatatgtc	caaatggcat	tgcgcatctc	ctccttggtc	420
atgcgcttgt	tcctacggcc	gcacggttga	tgcgaggagc	gtctcccttg	cgggcttttag	480
tcttgctttt	tctttctttt	tactcattga	ttcttttggt	cggaaacatc	tccccctgca	540
ataatcggga	agatgcgatt	aactgttcat	ttcgaggata	gacctcatat	ttccggtgta	600
ttgctcagac	gaggcacttt	gtgctgtcct	cccagctgcc	ctgctccgta	agccaatcgt	660
ggaagagacc	ggagcgagcg	atcgtcggga	gagtgggagc	agagtcatgt	ctgcataccg	720
cttggtctcg	tagtcgaatt	gagcgtttgc	aactcggcat	ccaatgcttt	ggcaaacgca	780
ttcgatcagc	cgggtgcagag	acaaattcga	tcagccagtc	gtgccgtcct	ttgcctcttc	840
cgaaaaaaag	tggg					854

(2) INFORMATION FOR SEQ ID NO:774

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 518 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...518

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:774

```

gtcgttgatc agtcccacta cgcgacaacc tttaggcgta tgtttacgga gaacttactg      60
cttggctgga agattatagt cttggagaaa tttgggagaa aatatcattg gtggacaacc      120
ttgggctaag tagtgagatg gggaatagaa aaaacggctt gtttttattg tcgagggaga      180
tacagagggtt gccttttcca tgaacgtgtg atcccatacc taatgagcaa aggctaccgc      240
aatgcatgaa tgcccagaag atcaccacca ataaatcgct tcataaaaag ggtgtatagc      300
ccgcttcgaa tacttggaag atgaagttcg aagcgtagca gccaaaggaga tatcttgatt      360
actactttgt tagacttctt caggctacca acaattttcc taactatact gcg gatagcc      420
ataagatttc ggatatagag caggggggta gacaaggat tgtgggggta aatgggtcgc      480
ttttctatcc tatattcagc gccacgaact agaggcac      518

```

(2) INFORMATION FOR SEQ ID NO:775

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 465 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...465

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:775

```

gagccagatc ttctttgggtg agccagccat tattgtaggc aatctcctca agcagggcat      60
cttcaagcct tggcgtttct ctatgaccga tacaaaaagg aagcatctgt cagtgattcg      120
tgtgtacctg tatccagcca ggcaaaacac gccccagttg ctggagacgg agctgcttgc      180
gaagcatgaa ctctgttga ctgaggttat ttccaattcg ccccgcgccg atggtttgac      240
atctgtgcta catcaagtac atcattggga tagaaataga gtcccactac tgcgagttgc      300
tcttcggctt ttccggtttt tcttcaggc tgatgaactt gccgtagcat ccacttcgcg      360
tacaccgtat cgctcaggat cattcacata atgccgaaa tggtggccat acccttttcc      420
gcatacggcaa ctgccgaccg agcatttggc tgaagccatg cccgt      465

```

(2) INFORMATION FOR SEQ ID NO:776

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 530 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...530

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:776

ggtgtctgtc	taatttggtc	tcttcocctgc	ggatcaacac	tttcaccaa	ttgatctgaa	60
gcaatggctg	aatgagcctt	ttactcctcc	accggagacg	aaaatcagct	ctttgaatag	120
gcagggggga	tccccctaaa	atcaaaaatg	atagtcocgg	agttattcca	ctccgggact	180
aagaactcgc	atccccctaaa	aaacattttag	gatactattg	gtctataggt	caaattgcag	240
gctgtatgat	tgagttgtgg	ttctatagat	caaaatctca	aacccaaaatc	tccaaaaatg	300
gcgcgagaat	cttttcgttc	cggcgcgaga	ttttttcaac	tccgaaccaa	aataaaaaatc	360
ttctcagacc	acgtttttca	gaaccgaaat	accgtcaagc	tattttcaga	agcgatacga	420
cattgtcatt	gctaattctga	attagagcga	gtgagttttg	cgggtgcagg	agattccact	480
tccaacacat	ggcgggattc	gggtcgtccg	ataccattcg	gccaaaatat		530

(2) INFORMATION FOR SEQ ID NO:777

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1115 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1115

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:777

gagggctttt	attcataatt	cgtcagata	taaaacgaga	gttaattcag	tagccgattt	60
cgacgaatag	tttcttccaa	cattcataga	tatttgccga	gagtaggatt	tgaccatcaa	120
ctctgattct	tgtcccattt	tcttacgaga	gtttcatcat	ccatcaataa	gcgtaactta	180
tccgcgaagt	cttcattgct	tccattggca	caaggaaacc	attgcgaccg	ttttcgatca	240
gttcctcggg	ccggctggac	aatcgtatga	gattataggt	agtgcataatg	cttcgcttcg	300
agaagtacca	ttggtagtc	ttcgaaacgg	gacgtcatta	gataatagca	gatgattccg	360
tagtatttgc	gaatttccgg	tgtagatggg	attatttcta	tttgcgactc	catattgcga	420
gatgcaattt	ctttacgtag	ctcgattcat	tttcgccatc	tccgactatg	ataagcttcc	480
aatcaggcct	tctcgcagca	ctcgtgatgc	atcttctatc	atgaattcaa	aacccttctg	540
taggttaagc	ctgccaatcg	ccaacatttg	tttgtgagta	gtagcatcct	ttggactgta	600
gtaaatgaaa	cttgattggg	tatgacatat	gctttaggcg	tccacgtaag	attgcctcga	660
acgattgctg	atctcttttt	gtcagtcctac	aacggcatca	agccctgaat	acagaaaccc	720
ccttatgcgt	tttgtatagg	gcggggcaata	tcataagaga	tatgttcgca	tccgatcgta	780
aatatctgcc	tctgttactg	atctgagaca	aaattgtatt	gataaaaaata	ttatccctat	840
caataaaaacc	ggttcacgct	tcttgatag	ggcttttatc	ctcgataagc	cttgaaatat	900
actgttttgc	gggctaattgc	attgccataa	acctaattcc	gagatggtgt	acttctattc	960

```

ctttttctac ttggaaggaa gctctccttc ttttgtacaa acgctgacta atgatacgcg      1020
atgaccattg catgcaggtt gttagccaag ttgatcacgg cgcgttctgt accggcacgt      1080
ttgttattgt atctaacagc agataaatca tagag                                     1115

```

(2) INFORMATION FOR SEQ ID NO:778

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 431 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...431

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:778

```

gcgatgggtg gattcggcgg acatcatccg gcagatcgaa tctttgtcgc cgagatggag      60
cctgccgtcg ccaagatcgg cctgatccgc gactcggaac cctctctctc gtagtggatt      120
gtttgaaaaa ggttttcccc tcgattcgat cgtatgggat cccgtactca gagcttcggc      180
cgacagctcc gcgggaaagc ggatcgtttc aatcttgaag atataacggc tttgtcccgg      240
atagattcat cagccgaat cttcccgaag ctgccacct tttgggctgc gaacggacga      300
tgagacctg ttagacttct atcgaaggag ccggtgtcgg cctgtcctca agggggggca      360
tgccggagaa tcgggtcgaa cggatncgna tctttacgac ggtcgatgcg aagctctccg      420
actcttacgc g                                     431

```

(2) INFORMATION FOR SEQ ID NO:779

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 471 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...471

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:779

```

tcctgcgcaa agagggttat ccgcgccatg cactggtttg cgaacgcaa cgggttcagg      60

```

attgacttcg	gaagacattg	cagccagaca	gattgcactc	ctccgggtat	ttatacccct	120
cagagtattg	aggagaaaaat	tgtttgatg	ccgataagtt	tttctccaag	acaaaactcc	180
atcgtcagaa	aaagctgaag	acgtcaggcg	cagtatgctc	tcctacggag	ccgatagcct	240
ccgcctttcg	acgagatgca	cgccttattc	aaaatcccat	taggataaaa	gtcaaggaat	300
atcaggaggg	tggcccgaat	aatctaaagg	attctcttcc	tgcgaaaatc	tgctttttga	360
aatagtacag	aagcctcata	atcaatggat	cgtgaccgac	aaattacctt	ttgctctcta	420
ttcgcggtgc	gtcaaagccg	gaaacgtttc	tactacatgg	tgccaaacgc	g	471

(2) INFORMATION FOR SEQ ID NO:780

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 651 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...651

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:780

gaattcttta	tcgtctaacc	atttcgggca	caagatcaat	acttccaaa	tagcttatga	60
gcaagatcag	cttcaaaaac	gactattctg	aagggtgcg	actgacatac	tgcatgcgct	120
gacagatacc	aacttcgttc	cacaagagga	tacggctatg	actcctattg	cgaggaagcg	180
cgtgcgatga	tccgcctgaa	tgcaataagc	ccgatgccga	ggtccatttc	gtatcgggtg	240
ggacaagacc	aatctcttgg	caatcagtca	cctgctccgt	ccgcaacgaag	ctgtatagca	300
gcacagtcag	ggcatatcaa	cgtacacgaa	accggtgcc	tcgatccacc	ggacataagg	360
tttgcacagt	acctaactcca	ctcggcaaac	tcgtgtggag	catatccgcg	aagtccttgc	420
ttttcatacg	gacgaacaca	tgtaaggccg	tccatggtct	atatctccca	atccacagag	480
ttgggcacac	ctattctcgt	catgagctgt	cggatctgtc	caccttttgc	cgtgcaaacg	540
tctcctactc	taccttgacg	gtgcccgat	cggttcggcg	atcatggnga	gacagaggac	600
aatccgaccc	tgaccgatat	agccaccctg	accgatgggt	ctacatcggc	g	651

(2) INFORMATION FOR SEQ ID NO:781

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 401 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...401

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:781

```

tggatttggc acgtctatgc ggcattgcaac cggctgcagc cctcatagaa ttatcaatga      60
ggacgggtacc atggcacggt tgccacagct atgggagggt ccaagcggtt tggactgaag      120
atcattgcca tcaaagatct gatagccacc gctcaaaca agaattccatc gtagaaaagg      180
gtgtagaagt ggatatccta ccgaatacgg acacttccga ctcatacctt tccgtcaaaa      240
atccatggac tggagcacat agctttgttc aaggggacgt gggacgaaaa tgaacgatac      300
tcgttcgtat gcactcatcc tgtgccactg gcgacatatt cggctctatgc gttgtgactg      360
tggcggccaa ttactgcaag caatggagaa gacgagaaag a                      401

```

(2) INFORMATION FOR SEQ ID NO:782

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 361 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...361

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:782

```

gggtgtgaag atcgtatcgg ccggtataga gagggagagg acttcatccg ctgcaaaccg      60
aggaaaatgc tcagggacat ctccgctccg cgcagggcgt acggctcgaa agaattgccg      120
aagaagccga agcgtagctg atctccaggc tcgcaattcg ttttcggaca acttcccgat      180
cttctttttg gcacgcccac ttcgaccagc ttcgccgtgt tacggagggt ggtctccgca      240
ttgtttactc ttcccgtagc ancagggcgg aaaagtaatg atctatacag cttagctcac      300
ctcctccgta ttggcgacga atcgccggcg agcctcttcc ntacgcacgg gttcttatgc      360
g

```

(2) INFORMATION FOR SEQ ID NO:783

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 577 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...577

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:783

```

ccaaacgatt ttgcttctgc accacgtaag tttcgggtgct tttgtctctc attttccatt    60
gcctcctcca agagctccac acaagatata gtccgaaggc cttcttggtg ttcttaaaga    120
gtgcgatcgg tcagaaaaag acgaacccaa atcagaagaa agtggttccg gaaatcctga    180
aaacacgcgc gaaaaaattt cgtttttggt cggaacaaa aaaattctcg aaccaaaccg    240
aaaaattctc agaccacggt ttgcggagct atactcggca aaatttacga acgaaaagcg    300
tgcaagatga gtatgcccc tctcgtgat tttgtatcgg aggggtagag agttttgtca    360
gagggcttgg ccatctaaac caaacggctt gacacagagg actgaggtcg gtggaaaatt    420
gccttacttt tgggtatagc ccgccaccgg attcggcgaa gaaaggatct gcaaattggat    480
ggtttcgcag atcgtttagc ttacgggttc gaagtcgagt tgctttctgt ccagattggt    540
tgggcaacac gttacggtga tggcatcgcc cagactg                    577

```

(2) INFORMATION FOR SEQ ID NO:784

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 394 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...394

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:784

```

cgagcgagat atattcaaga tcgactatgc ggaaaggctg tccgcactct cataggacaa    60
ttggtgcacg atttcggcaa gaccacacct gccgaattga tgcaataggt ttcttcaacg    120
cagaagaaat acagcccaat ggcaatttat gatcgatgac aaaggctctca catactgttt    180
caatgagtat cagatactgc ttatgccaga ggtgctgtct atgtccgtct cggatatgac    240
gtattgctcc tttgctaagg gatgattccc cactaaagcg ttacttgccg tagccctcc    300
ttttgcttcg accgatatga ccaatatgca ggagataccc gaaagccgct gtcccaaccg    360
gcaggtagcg agatcatcga gaantacttc ccac                    394

```

(2) INFORMATION FOR SEQ ID NO:785

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 483 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...483

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:785

cccccgtaggt gacatcctgc tcaatataga ttcgaggagaa gaaggcaagt cttcgtaggc	60
tgtgcgggag gtattgatgt caatgtcacg ctgaataaaa ggaggaagag ctggtttcgg	120
acgaagaaat aggcgtaaag atatcttgac aggactcaaa ggcggacatt cgggtgtcga	180
tattcacctc ggacgtccaa tgccaataaaa ctgatgttca gattcttgaa agaggctgta	240
ggatttatgg tgcctgcttg gcatgggtag agggaggatc gctccgcaat gctatccgcg	300
cgaagcggtt gccgttatca ccattcagga agaagaggcc gaactgtctg ggaactggta	360
tccgactacc aggatttggt ccgtaaggaa ttagcggcat agaggaaaac attcaagttc	420
gaggcaaggt cgtatcgaat gccccgaatg attattcccg aagagatcca agactgtctg	480
atc	483

(2) INFORMATION FOR SEQ ID NO:786

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 938 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...938

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:786

atcaaagcct aattcacgct ctttttcgag attatcccga atctctttgc tcgttcgact	60
aatgcacaag tagaacaacc ttgtccccta atctctgctc acgaacttcc gagtagtggt	120
tgtcaatcaa agccttaaaa tagttgggtc cgtcttttgt ccttcacaaa cgatcaggaa	180
tcgaactatt atgtccgggt attctctttg cgtttttctg cggcttttgc ttctcgcttt	240
tcacgtttag tcgttctatt tctctttttg gtggtgtcc catggctcta cactgaaaaa	300
atgaacggga tagctccata acgtccggtt atatagtcgt tttaaaactc cgatctttac	360
gaacttttac tccttctgca tctcgaaaact cttcaatgaa taaagatcgg aggattctgt	420
cctgtctttt tccgtgaacc aatttgatca cggcgtaaat aatcgccctt cagcagattt	480
gtgtcgtgag attaaagatc aactgtgctc cattgggatt tgtctccgga gacataaaca	540
cttcagaata cttctgggtc aaaggggggt gagtttgga tctaattctc tatcagcaaa	600
acagaacctt ctttcaatgt gtcgaaataa gggcctgaag ctctatgact ttcttggttc	660
cttcogattc catttcatcc ttggcgaaat ttttctctcg acctgattac cgtcttggtc	720
atatacccaa tgagagtttt gattttotaa tacgcttcgg ccacgcgaaat tctttcaata	780
tgaatcttcc aattcatccg gtacttccct gagtacatcg ttcgaaagag gttctctgtg	840
acgatcaagt ctttgaatcc taactgcgtg cgacggaaga agctttggct ttcattacat	900

ccttcggat ttctttgagc attttcaggg taagcctt

938

(2) INFORMATION FOR SEQ ID NO:787

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1205 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1205

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:787

```

cgcccaanat gaaatccggt gaataacctc acggcatccg cagaagatgg acctataccg      60
cttcatggaa cgctgtacct tcagccgaac gctacaacat ttcgctcgct tcaagcgtac      120
agctgccgct gacggcgcat tctttgtacc gacgaaaact tcgatggaat aaagactcct      180
accggagAAC tgacagctgg acgatagaaa atccgtctac ctatacgtac gatgagggtt      240
acctggcgat ctggtacaag ccggctggaa agggactaac tatgctccct acacgactat      300
atctgcttgg atgcatggca gtacattttc aatcacaccg atgaggcctg atctcaccgg      360
agttggatct ttccaaagat ggcggaaga taacttgagt gtgaagctct atgctacgaa      420
atacgtcgcc gacgatggcc aggcaatcag gtggaaggct atacgcgagc agcgatcgcc      480
ctcttccaat cgacgagact gtccgagact atgtgcagtc agagctgctg tatctgaata      540
atcggacgga ctggtcgatc agtggagggt attcaacggt tctttgacaa gggaaacggag      600
cgttcggtaa tcggcatata tgccgtatat gcaccggaaa tctctatgtc gatgatctca      660
agatcactca aaagtataag gccggcaaa cctgccggat cctttcctct tcaagagata      720
tttggaagac gaatcatcga tgtaaattgtg cccgagcgag tattcaagaa tgaaatgttc      780
catcgggtggc tgccgtgaag catggaggcc aaggagtaca atatcaagg tacaacgac      840
tcctttcagt ccgctccaat ctttcggagt ctgtccttct ccacgaatct gactccctcg      900
gtaagcatgg ccaaggctat ggtacagggt acggagataa tatccatata gacaatgttc      960
atggcgagggc tgtaagtatt atgatttcag tggtcgtttg gtttatagcg attactcggg      1020
caacgggtca ttgttgtaa cttaggccag ggcggaacgt tcatcgtcaa agtgggtatc      1080
gctctatgaa gctgacttac taagctatct ctcacccttt cctaaaggta taccgggggg      1140
gtgtgcccgg aagtgtgaaa gtgagcactt cggcacctct ttttattata ctctacgagc      1200
ttttc                                           1205

```

(2) INFORMATION FOR SEQ ID NO:788

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 501 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...501

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:788

```

gtgtattctt tggattaggc gcataccttg tatatatgtc caaagcttaa gctacttaag      60
tgacgatcca cnagtttgta tcaattgcc a tgtaatgggc cttactatgc cacttggcaa      120
catagttccc acgcgatgcg tgccaccgca acgactgtcn tgtgccacac aacagtattt      180
ttagcaagta ttatttaagg catcagatgg tctgcggcac tcctatgtat ttaccatgag      240
gaacnacctc aacgcgatgca ggccatatcg gcaagtcagg cggtaatcta tgacactgtg      300
tgcgttgcca cgctcaactc aatcaagaat ttgtccgtnc aggatgctga ccanggcgga      360
tattcgtact gcagaagaga aagcatgctg ggctgccaca ganatgtgcc tcatggaggc      420
aaaaacagcc ttagcgcaac gccaacggga ttatatcata cccaaagtcc cctgttccgc      480
agtggcttan gcctatataa g                                     501

```

(2) INFORMATION FOR SEQ ID NO:789

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 344 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...344

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:789

```

aagccgaaca tgcgtggtac gntgaccagc gtgtagcata gtaccggcag tagatgggtca      60
gataggccag ccccttgcca aagacgatac ggagtgcgcg gagtagtggc tgatatcggt      120
aggtagcagg tctgtaaact tattccttca cgcgccgtac cggccgagag tcctatgccg      180
agcaggagcg tctgcttatg atcaggatga gtaccggcagg tagcaggaag gaagcgaaac      240
cgacgtcggg ttatacagtg ccacgtcttc atagtcgatg gggtaaagana tgattctccc      300
tgacgctcgg tagctcctac gctgcgcgct atcttgatct cttg                                     344

```

(2) INFORMATION FOR SEQ ID NO:790

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 414 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...414

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:790

cggcgagtg	tctgaatgat	gcgtacccaaa	gaggagctgt	ccgtcatgtc	ccgtagtgca	60
gattgatcag	ccgctcgcgc	ttcatgtccc	gcacccatcg	tcgagataga	ggtgttcgat	120
tcgtcccgta	ttgaacgaag	acgaacgcgc	aggataccgt	gcacttcgta	ccccttttct	180
atcagaaact	cggcgagaaa	gagccgtcct	gccctgtaat	tcctgtgatt	aatgccactt	240
tcttttcata	atcggaaaaga	ccggattcct	aatcttgacc	ggctcaagca	aatatatgat	300
tccctgcaaa	agtactcatt	cctcccacga	taatgcagga	tgcttgtttt	tcctccgaaa	360
tgacagtaga	gggctgcctt	tgctgagacc	ccaangggat	ccccatcgag	actc	414

(2) INFORMATION FOR SEQ ID NO:791

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 352 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...352

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:791

aggaacgagt	cagagccatc	gaggcacagn	tgcgcaaga	gttgtccccg	ccattncggt	60
cgatggtgtg	gccgaagnac	gtgtcctcgg	agccatcggt	nagaggagat	gaagcggccc	120
gtggatatgg	ccacgctgca	gcagcganca	tccgagaggg	aatctgggta	cgccccttcg	180
gtcgtctgnt	getatcggag	ccacccttna	tcatatcgcc	ggaagatcta	tcgtatcctt	240
acgcaggact	tctcgtgta	ctcggtcagg	atcganccat	tncatttacc	cgataataca	300
aganntatgt	ccgaaacaaa	ngaaagactc	tgcatatacg	ccgctnccca	ta	352

(2) INFORMATION FOR SEQ ID NO:792

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 402 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...402

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:792

cgggtttcac	ttgtgttatt	gccgttgacg	gcagagagtg	tagcagccat	agaaaggctg	60
ctcctgttgt	tatcagtctt	ttcatatcgt	tctttcccg	tagtgcagg	caaagggtgg	120
gaattttgac	gaattgccgt	tcgtaaatat	gaataggcac	acaactttta	tgtctttata	180
gcataattgt	aaatcttcct	aaaagaatga	aaggcttatg	agaaacaagt	acataattcc	240
atccgaatgt	cgaatggcaag	gtatatgggc	gtatagacgt	gcacctctga	ttacttggt	300
tataatgcga	gaagaatccg	gggtgtaccc	ttttcctgtn	tctgattcnc	ctttccnccg	360
tgccgatggc	totattccga	taagaaatgg	acacttttgg	ta		402

(2) INFORMATION FOR SEQ ID NO:793

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1604 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1604

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:793

tcttcagtct	tggcaaagat	gaactgactc	agaaaatgat	ggtcaattca	ccggacgcaa	60
atgggagttc	actttcacta	cattgggtac	tttcggagag	ctctctttgc	ttcgtttcct	120
cttttcnata	gcaccagctt	cggaggacat	attgggtatg	gatgctgac	ctcttctgct	180
tcatnatcca	agctgttcct	acgagtatca	atccaaacat	ggtaatgtat	gggggaggaa	240
aacctccaaa	tactgctttt	catcaatggt	gtactggctc	cggttctgct	cggaccgctg	300
tttccacatt	ctttacgggc	agcagcttcg	tggtaaacaa	gatgcgatgt	tcgacctctc	360
cggcggaac	cagatcggtt	ctgcctggca	gccttcaatg	ggtggcaact	gagaggcctt	420
gaagctgttt	tgaacctgtg	gacgtggttc	tcggattggc	tgtattcttc	cttgccagag	480
tatcggtctc	ctttatttca	tcaataatat	cgatgacgaa	agtctctatg	cggcagccaa	540
cgcgcacttt	gggccaatac	ggtcgcatte	ctgattttct	ttctggcaac	atagctttcc	600
tgctgactac	ggaaggattt	gccgtgaatc	ccgtttcaaa	gaggtgtata	tggagccata	660
caagtacctg	tacaatttct	tggatagccg	gccgttctgg	ctgtattcct	gttgggagta	720
atcctcgtag	ttggcgata	ggtttgactc	tactgcgtaa	aggcttcaaa	cgcggaatct	780
ggctcacggg	acgggaaccg	tactgactgt	gcttgcccta	ctacttgtag	ccgttggaac	840
gatacgtctt	ggtacccttc	cacatacgat	ctgcaaagtt	cgttacgac	gagaatgcc	900
gctccagcca	tttcacgctg	aaggtaatga	gtacgtctct	ctccttatto	ctttcgtttt	960

ggcttacatt	ttctatgctt	gcgcgcactg	gacatttcgt	aaaatcacaa	aaaaagaaat	1020
ggagcaggag	atcacgtcta	ttgatctctg	acagataaatt	ccacaatctg	aggctgtgca	1080
ttgaggttcg	atcccttgat	acagcctcat	tgcttttata	tatttcgcaa	taatcatgac	1140
cgacgatttg	aaaagacggc	tatatttacc	tgaccaacga	tagcaatatg	gtcagtcatt	1200
catatcaaac	cgcaccgcat	cggatggctt	ggctcttagc	ggcggagcgg	ccaaaggctt	1260
tgcacattcg	ggagactcca	tgctcttgag	gacaatggga	ttcgtcccga	catcatagca	1320
ggtcgagtg	aggagcggtg	gtagctgcac	tctatgccga	tggatacagg	ccgaagagat	1380
tccacaatta	ttccgaggca	aaaatttcag	attcctaaca	ggtggcaa	accacaaaga	1440
ggtgtattca	gcattccaacg	cttcaagagt	ttcttcgctc	gactttacgc	cacaagaata	1500
tcgaagacct	accccttcca	tcagaatagt	ggcaacggnc	cttgaccgtg	gagttgtcaa	1560
agttttttac	aaggctctct	cgtcgagact	gtcacggctt	cctg		1604

(2) INFORMATION FOR SEQ ID NO:794

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 490 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...490

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:794

tgggtggcaa	cccatttgtg	attgagtttg	tccacgacga	tgtntgtcac	gtcaccttgt	60
ccagcacata	gtacaaattg	ggttcttctc	ctccgaccgc	cgaacagcga	taggggtaga	120
agtcgaggac	aatactccgg	ctgcatttag	acgccgaaaa	tgcctatata	cgatcccata	180
cagacagagc	cgttatatcg	acggccattg	catagatagt	cttatgtcct	atggctgccc	240
cgagggattg	acaaactgct	cgacgtaaaag	atggctgtcg	tccgaagtcg	tttccgggtg	300
accccgatcg	ttgaagatca	agacaccttt	gcgcgtggat	ccgcactacg	gtgaaggata	360
tttaccatt	tgtctccgtt	gggtaggata	atatattgcc	gaaggaggcc	agattggcta	420
catccgata	gctgaaagaa	tccatgtgct	actctgcgga	tcgtcatgaa	agatggctct	480
gcctacggca						490

(2) INFORMATION FOR SEQ ID NO:795

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 489 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...489

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:795

```

cgcacaantt ttcagcttaa atgtttcttt cagatagatg atctcgccgt ggtcaagaga      60
tgatcaggcc ccaaactgga acccgaaagt gtatagatcg gaccttaccg ttagtgacgg      120
taggagtaag atcggcatag gtgcgggagc acccagttta gcctgaagcg tcatcgcccc      180
caccctgtg aggtagcttc atcgggatac totatcgaaa gataaactgt ctgggtcggg      240
ttctggaacc attggttata gaaaactctc gtacgatggg ctccccaatc tgctgttcac      300
ttgcggcgca ggctgtttga tgcgcagggt cggatagttt accaatanga gtttgattcc      360
ttgctatcac tatgatcgcc gatagtcacc gtacctgtgc tttgaagaca aaaccggtt      420
cggcagcatt aatggcattg cccatgcggg acagacagct ctctcttaa tcgtcanctt      480
aacgatggt                                     489

```

(2) INFORMATION FOR SEQ ID NO:796

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 419 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...419

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:796

```

cggggcaacc tgctcaatac agtgcctgaa atctgtactc ggaagtccgg aaagtacaca      60
tcgtactacc ctctccccgn ncgatgggtt aggtccaaa attgccgget ttacagccat      120
gaaagagtgg cgtgtgattt tttacgtttg gttcgggagg taaaaatttt acgcgccaaa      180
gcgaaaaaat tctcgcccggt tttctctgga tttacagacc acaatccgag ctttttcggt      240
tcgtatttat cgaagtggca gattttaccg cattaagatc agagatgcca gttcatctaa      300
gcgcaaatag ggaagtggg tctggatcga actgacgact aacataccac aaggagcata      360
gcggtattcc ngtagaacgt cagttcgacg ttagaaaaca ccaatgaatt tgttttttg      419

```

(2) INFORMATION FOR SEQ ID NO:797

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 472 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...472

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:797

```
attctgaaca agaaaggtag atttgccggc tttgaagaca catacaagcc atgttcatga      60
actacgagcc agggcggtac acaccggtag aggaaaaaaaa aatggtcgta tgatcgatcat    120
cgtagccaaa aagtatgagg gagatataaa gatttcggtg attggaaaaa ccaacgcggg      180
ctccgtaccg aggtgaagtg gcagaagata ttgcttctcc cgttacagct aatgctattc      240
agcaatcgtt aagcaagaat acgagaaaaga aggtaatgat ttgacctatg ttctttgatt      300
ggcgatcaca aagatatctc tgccncaatt actccgggga tcgatccgac caggatatatg      360
gacaaatant angtaatgac cactacaacg aatcttcatc ggtcgtttct catgtnagag      420
ctnagaggat ctganaacnc aatcgatcgg actattcact atgagcgcaa ta                472
```

(2) INFORMATION FOR SEQ ID NO:798

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 549 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...549

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:798

```
actacgaaga agagttgatt cggggcgatc gatnggtggt gacgcggaaa actatcgтта      60
ttgtgacagg cgagacaaga cagacttcgt tgccaatgag agatcgngga gattttgcgg      120
tngggcaaac gatacgagct gtacggatta gatttgccga tgctaccatc agccttgagg      180
agcaagggcg cgagatgaag caagattgct cctcgatgga ctgacagccg aaacagccgg      240
cttgatcatg cacaagaca aaaactgtat gatgcagntg ctgaggacta taatctatgg      300
caagtatccc ggccagacgc aaagcgatca aagaggatgc tttttttcgg ccttggaagt      360
aaagtatgcc tatgccatca cctgccacaa aggcagggag gacagtggaa acatgtctat      420
gtagatatgg gtatgctcag catctgcctc atgacgagca actctgtcgt tggctgtata      480
cggcagttac cgagcttcgg agcgactctt tctggtcaat actccgaagg atatgctcca      540
taagaagggg                                     549
```

(2) INFORMATION FOR SEQ ID NO:799

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 479 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...479

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:799

cggctgattg cgtacttcgc cgaattcgtc ttggccggtc atgatcggaa aatggcttgg	60
atcttaaatgt ccacatcgct attggtcggg gtgaagtaca ttcttccttt acgtagtagg	120
ctttgacttc tgccgagggg atgtcgcacg tgccaccttg aagagctccg cattcttggt	180
cgtactcggg ttgtaaaagt gccaaacctg tccagaaact cttggaactt gatcttgtag	240
tggtcgtgaa ggcttcgaat ccattccagat attcgtacac gtcgaggetg ttggattgat	300
gagtcggaat atcgtgctga agagattctt gcgataacca atcgccgggg aggataatta	360
gagtagccgc attggactct tccatcagggt ctacgcgtcg gtacacgact tcgcctccag	420
ggggccggtg tcggcttctg tnaaaacgtc tgttgaattc ctgagcacga ttgntagag	479

(2) INFORMATION FOR SEQ ID NO:800

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 432 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...432

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:800

cagcaaatat aacacttgga gtgtaggaac tcaatctcac cctgagcatt cgtagataaa	60
taogtatttg tattttgcta gactcgcagt gcttgagcat agtttgatga cttgcatata	120
ctcctcatgg agctctagat tgtgtattca gtacgaataa aatcgtgagg aaaagatgcg	180
tcttgatact tcggattttg agtaaagagg agtatacata cggatcctta cctatgagga	240
tctgcacata gttccctctc tctctagaaa ggcagatagt tcctttatca caaggccata	300
cctgggacat cccaatatcc cgtggctatt cgaactcgat tgaccaatcc aatctaaaaa	360
attgtttcag acaggaactc atagaaagtt cggcgaagaa ttatcaatta agggattgag	420
taatagcata gt	432

(2) INFORMATION FOR SEQ ID NO:801

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 616 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...616

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:801

gcagagtgat	ttcctcagaa	aagcgaatcg	gacccctggat	gaaacggcaa	gggaaaacta	60
cagttttcgg	cattattccc	tgagatgcgc	caccgattat	ccctccacag	aatccgaaga	120
gcaaagaccg	gagggaaaag	gctgaaagac	tttggagaaa	tacaagcagg	agataaaggg	180
gaggaaagac	aagctcatag	ccaactgctg	tcggcattcg	atatgaatca	gagacaactg	240
ccctccgtct	tctggatgaa	tgatgaata	tcaggcctgc	aagccattca	gtcagcttcg	300
tacttatgtc	aagcagctca	atgaagactg	ccgactacgc	ctgggaagtt	tcggaaggat	360
ggcgatggga	aagctcgtgc	catacctctc	gtggtgaaat	ggctaccttc	ctctctagga	420
catcgctccg	atgatcataa	ggaagagacg	aagaagctga	tcacctcgct	tactacaatg	480
agatgcaacg	tctctggcac	aatatgccgg	agagagaatc	gccgcaattc	aggctatcgg	540
gcagaactgc	accttcttga	cccctcttcg	acatccggtc	ctttccgcan	catgagacag	600
ntatcgtata	cagagac					616

(2) INFORMATION FOR SEQ ID NO:802

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 484 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...484

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:802

atccccgaaa	ctcttcttgc	gacaggctta	ctgttttcag	ttgacttnca	atctttttaca	60
ttcgaggaaa	cgtattttgt	ctgccaactc	cttacgagtt	cttctgtcag	ttcaaaagca	120
ttccaaagca	tttttacttc	tttctccaat	actttcttgc	catctctggg	aaatagcaaa	180
cctccaaaag	atgaagtatt	cttcgaattg	ggacaaattt	ccttgctcaa	tatctatggg	240

```

ctgtactcctt ttgaatgtat gttttgcaag agatgcctta actcttgact gggattgttt 300
cgttcaggct atctgtcatt attcgggaaa aaggaataga agacaatgaa aggcctgtac 360
tgcagattct ttatcattgt tcaagaaggt gttcattcct aagtagtaat aatctatagg 420
agccggctct ttttgagtcg aactttgtct atggcatctg tgataatggt tcttttgacc 480
aaga 484

```

(2) INFORMATION FOR SEQ ID NO:803

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 590 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...590

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:803

```

gcatacagccg gaacataacc taaggagttg taccactccc aacctttgca cccgtggagg 60
agatttttcgg atggacggct ttcgtagcat gcaagagtcg ttcatacagt tacgggtatc 120
ttctacccga acacccttga ggtaggctcc gccagaacag aagcagagtt gttgcctatc 180
atacaatccc gatggccgga ctggcccatt cggggaaaaa gccactctcg cgatatacat 240
tcagcgacct tcctgaattt taatgttttc atcgggatac agcagattga gcaggggaaa 300
agggtcgaaa aagtgtccca aaatccggta tcggtataga gataccggga agtacctctc 360
cattgtaggg gctgtaatgc acaaaattgc cgaagcatcc tcctcataga agcgacgggg 420
aaaaagcaga cagcgataga ggcggaatag aatgtagtgc gctcatcctt cgntcctcct 480
tcnacatgna gcgtccgagc accttattcc agcttcgcca cggcaagtct gatccgggtca 540
aactctgccc tttgacttnc gcagatttct ttcggctgct cgacactgta 590

```

(2) INFORMATION FOR SEQ ID NO:804

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 396 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...396

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:804

cgtcaatgcc	actccggtgg	gtatgtatcc	acatatagac	caatgtccgc	tattccgttc	60
gagggatatag	gtgcagagca	tctctgttat	gatctgatta	taatccgcag	gaaacgatct	120
tcattgcacg	cgtcaagca	caggggtgttc	tgtgcagaac	ggattggaga	tgctgctcat	180
acaggcggttg	tgcagtggcg	tatctggaac	gaacgatagt	ctctctcccc	gtatatccgt	240
tttccatgtc	ctgcattcc	gttcgggtatc	taatcggcag	tgccggctgc	ttgccctcca	300
tgcttgcttc	ctcctgctcg	gtcacccggt	atgtgccgga	aggagcagac	tattagacag	360
ggttaacgaa	tcgcaagcga	aaacgggcag	tacgct			396

(2) INFORMATION FOR SEQ ID NO:805

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 441 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...441

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:805

cgggcatggc	catcggcaat	atcgtaggta	gcaacctctt	caacatcctc	tcattcctcg	60
agtcagttcg	tccatcagcc	ccatacggat	ccaaggcata	cggtcgtgga	ctatgggatt	120
ttcattctat	cggcaatcct	gctctacttt	tcggcctttt	cttcggagac	aaaacgatca	180
aacgcttcga	aggcagatcc	tcttatcgct	cttcatatgc	tatacgggtct	atttggtcat	240
gaccgctaaa	gaaagccata	cggggaaaaa	tgcgcaagaa	aaggctcgac	gccatcgccg	300
gcatattctg	cggagcgaaa	tctccacca	agaggaactg	caacagcctt	gctgtccgaa	360
gacattcccg	tatcgcaggc	cacactttca	cggatctgga	aatcctcggc	atagaaaaat	420
cggcctcgcc	ttcagggaaa	a				441

(2) INFORMATION FOR SEQ ID NO:806

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 535 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...535

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:806

tcatgagaag aagatcgccg aagccgggaa agaccggacg gttttcgaga gcgggtaaag	60
aaaaacgaag acgggacata ccaaaacccg atacggatga tggagtggaa gacggcaggg	120
atatcaaaac aatcgctcgc aggctgaaga gtacgaagag aaagcccga caggcggaga	180
gcacatgccg atcggcaatt atacggcttt caattatccg tcaagagcga agcctccatg	240
aaagaagttt cgacttcgtg gataaccggt tctttgtgaa aggttgtggc agcactatta	300
tacttacaac aacggacatt tggctgaaga ccccaaactg gccgcatgaa ctttctgaat	360
gccttggaga agattcccag agtcgtcag agcatcggaa agaactggct gcgacacaag	420
ccaagatccc gacgttcgaa agatggtttc tgccgtatgg aagaaagagg aggaattgca	480
ggagctgaag gacaggccgc ggagctggat cgcaagatcg ccctttcgct caaaa	535

(2) INFORMATION FOR SEQ ID NO:807

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 490 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...490

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:807

ggcttcaagt cgcgatcaga catgatggct ccttcgagtg caaatgcccc tcgaagattt	60
tgatgggca gcatcatat tcgccaaca aagtcttgc tcatccaacg tagctttgtg	120
ctcgggaaag tgggacataa gtccgggacc cttcgatcgt accggtagcg tatgtacttg	180
gaccaatcct tacgtgctc ttgatttcga tcgttgccg cacaagagaa agagaattat	240
cacccttca ccctctttct ccaagacctt agcatggaca gccagcgaga attgttctcc	300
tcatccaata tgctgctatg tttttcaagt ccgggcagaa tatctcttct ctatcgggtc	360
atcatcttgc ntgatggcca tcagcatagc cgatcgtctt cttgcacgag gcggagcata	420
attccacggt tcattgcggc tcggtgaaag ctccgttgga tgcgcgcagc caagtcaggg	480
aggggacagg	490

(2) INFORMATION FOR SEQ ID NO:808

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 452 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...452

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:808

```
gcatacttga cattccgaat aggcgtatag attgagtcga tcgctatcgg gaaagctcat      60
tatgctctgc gcgattctct tctgccgaca catagccagc cccttattta tggaaaactc      120
catagtaagc gtagccgact tatcgagtgg caaatgacaa gattcgaatt caacacttca      180
aagtttgaaa gttgtgattc aaatcaccgg cacggaacac ctccgaatta gagataacaa      240
ttgtactttc tctacatcgg cattaggaac aatctgotta aaacgaactt gtttagattg      300
aggataatat tagtaacgtc ctccaatata cccggaatag tagaaattca tgctctacac      360
cttcaatctt gattgcagta atcgcaaaac ctcaagcgaa gacaagaata ttcgacgaan      420
cgcatcgcca atggtnatnc ctaaccgggc tc                                452
```

(2) INFORMATION FOR SEQ ID NO:809

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 378 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...378

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:809

```
gcttgcgatc actctcgctc tgtttgacctg ctttgtatga taccttggcg cctcggcaag      60
gacacggagg gtgcggtcgg gagcaaagtc gaaggcatac actctgtctt catgtaccca      120
ttgtgggtat aaggcgtttg tacgcggaga tagtttgcat atagccggat gcggaggtag      180
tatatgaacc ggccatatga agacgccggt ccaaggctta atgcttacac cggtagtcag      240
tcgtcgcatg agagggtgat tgtataagtc tcatccgggt ctttgccgat ggctgattga      300
ctaactcaag ggcattctctg ctttctctct cctcatcatc tcctcccccg gccacattgg      360
ccaccttaaa gagaccga                                378
```

(2) INFORMATION FOR SEQ ID NO:810

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 633 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...633

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:810

gctcgtgcct	cttcgagcgc	gatccgcatg	tagcggatgt	catccgtgga	aaggtagggg	60
ctgtcatcgc	atttcctcct	ctcgaaaaag	caanggaggt	cgctttctaa	ccggtgtatc	120
acttccttca	tcagcgtttc	tcggatcaac	gggagcgggt	ctctactttg	aagcggctgc	180
aataggctctc	gacggcttgt	gtcccgttc	gttcagtcgg	atctgaatgg	ctttctttcg	240
gagcacgtgg	ctcgcgggag	tacattgtgc	cgatttttcc	tgctcatatt	cagtatgcaa	300
atatagtccc	tttattctgt	tgtcggccgg	tctgcatcca	ccatccacgg	aaagtaagac	360
ggtgatgtgg	cgaaactccg	aaacgacgaa	tacggatttg	tgtgcagggt	acggataacc	420
tttgttgcgc	tcccatccgt	aatcgggaag	tccttattca	gacggagcat	cgagtcgtcc	480
cgataggttt	ggccaaaatg	gaagctgctg	cgatggagcg	atagcgggca	tcgcctcccc	540
gatacagtgg	tgagggattt	gttcgaaagg	atcgaaccga	ttgccgtcga	tcagcaatct	600
ttcggggcga	aaaggcaact	gctctatggc	gcg			633

(2) INFORMATION FOR SEQ ID NO:811

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 505 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...505

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:811

agcgatcaaa	gcggcagtg	aactgaccga	tcgctatgta	tccgatcggt	cttcccagat	60
aaggcgatag	atgccatgga	cgaggccggc	gcgagcggtca	tatcaccaat	gtgggtggctc	120
cgaaagaaat	cgagatactg	gaggccgatt	ggcatcggtg	cgagagaaca	agctctcggc	180
cgtaaaggct	cagaacacga	actggctgcc	tccttccgcg	atcaggagcg	gcgcactcag	240
cagcaatagc	ggaagagaag	aaaaaatggg	aagagcagat	gtccaagcac	cgcggaagggt	300
ggacgagaat	gtagtggcgc	atgtagtggg	cgttgatgac	agggttcggg	ctgagcggct	360
gagcacgggc	gaaggcgaac	gtctgcgcac	gaggcagatg	atctcaagac	caaagtagta	420
ggtcaggaca	cagccatcga	aggatgggtg	atgccatcca	gcgcaatcgt	ctggggactt	480
cgcaatgaaa	gacccgaacg	ggtct				505

(2) INFORMATION FOR SEQ ID NO:812

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 751 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...751

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:812

```

ggccaacatg ggatcggata tgatgaggac tttgtctgtg atgtccggca tgctatgtat      60
tcgatgtgga tgtcgaaatt caggcggtec ttatacttct gtaggcggat acaaaggcat      120
tttcacaata gtcgaaatag ttgaggagcc atgatggaaa ggcagtcctg ctccaaggat      180
cgtagcgagc actacttgtc ttgggggtac gagcactcgg cctcacccaa gggcgtagtg      240
acggtcgcac ctggttggtc atcttcttgc tgatctcata ggccattact tctccacacg      300
ttctatatta cgacgaaagc gcagtcgata gttctgaata gtgcatcgcg catctccatg      360
acgaatctat tgagaagaga atgctcggca ccaagtgtat tacttccata attattgttg      420
tgaggtaggt tatgcaaadc tcgaacgaga tgttctaaat accgattcgc gcaaaaatac      480
aatatctttg tgcataaggc gttgatctta cacaccaaat aaagaattga agattattcc      540
tcagatgcaa ttcttatata attcacgttt ttogttgaga gtcgctcttt ttgcctgatt      600
tgtgcctggg ccggacgtac gctgtcggcg caaacggaaa agtacaaaat cgcccctacg      660
ccgactacaa acgctatcat cttggatcca tgtagggatg catgcccagg atttggttat      720
ctccaacaac gggttgtacc cgaagggagt a                                     751

```

(2) INFORMATION FOR SEQ ID NO:813

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1145 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1145

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:813

```

gacgaagctc agaccttcct gctgtgcaga gcgaaccagc agcgggcgaa aacctccact      60

```

```

ccgtttacat agaccatatt ctcatcgtag cttcctcccg aaccgagtat tgcgagctta 120
gttcattgtt ctgcgttaact cctgcgtggt actgatgagc gattccacccc ctcccgtagg 180
ccctgcattg acacgagggtc tcgggtattg acgcgctcca tcgtgttgag tctgcgtttt 240
gtggctgtac cgtcacgctc gaaagctcca tctcgccctc tgccaaaacga acatcagccg 300
agtgtccttg gtcagagacg gaaagctgcy acttaccocct tggaccccat ggagctgaac 360
tcgatcgtga tgctgtccgt cgtggccttc atcgaaactc gtagtatcct ttcagattcg 420
tcgatgcgcc tgtccccgta cacgcacttt gactccggcg aacgggacgc gcttttcccc 480
acggctcgagc catagcccga taccctgacg ccttgtgcc a tagctgcctg agagcataga 540
ggcagcatag cagaatgaat gacaatctgt atataccgtt gagctttaat acttgttctt 600
tcgggnaata gcttccttca tgatctatta acggtattga gggaagaaaa tcgtttgtcc 660
ctttctctcc ttttcccggy cttaatagcc aaaatccaat ggaacaaaag taatacctaa 720
agagattcga aaacaccatc cctaaaaaac atcagtcgta tgtgccatga tgctacaaga 780
aaaagcttga taaagaagtt tttggatcag atagagaagc cgtcgaaagc aattgtgtcc 840
ataccgacga tttcgccaag cattgttcag gtgcaggatt cttgcaaata cgagaatggc 900
aaaagcatca gtccaaaggc aaatagaaaa actctgtgtg tgggggggat gtgaagaaag 960
aagaagacga atcgactttg ggaattacaa gacctgtaat tttagatgcc cccttatcgc 1020
tttcgaagtg agcggaagac gggactcgaa cccgcgaccc taaccttggc aaggttatct 1080
ctaccaactg agctacttcc gcagtctatc ccgaaatgga acttcggaga aaaagaaaac 1140
gaaac 1145

```

(2) INFORMATION FOR SEQ ID NO:814

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 546 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...546

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:814

```

ggagaattgc tgtttgcaga ttttatttcg ttccaatcct gacanaagtc gaatttttgt 60
gccctctaca tttcattttc gcttaagttt cgaaccgctc gaagggtgtg catgtacaga 120
aaaagggttg acagttggag agaatcgctc aactgtcaac cttttttccg tatggtgtca 180
ttcgccggag gaatactgaa ggtattaagc atccatgcag ggtaggcccg attccgacag 240
gcttattcct tgatagatca ggttctcccg ttggatcagc gcagggctgc agaagcttat 300
cggtcagttc ttcgccatgc agattacggc cgatgatagt gcctcgttgt cgatcagcag 360
ggtatgaggg atagaatgga cgccgtattg caagctgccg ggcttgccca gnccttgtaa 420
tcggacattt gcggccatgt gtaccgagcc ttgcgatggc tttcttccat gctcccgat 480
tttcatcgag gaaaccctca cgatctcaag tttcccttg tagtcggcat aaaccttgac 540
agatcg 546

```

(2) INFORMATION FOR SEQ ID NO:815

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 383 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...383

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:815

```
gcctcggtc cacaatatgc ttactatgct tatggaaaag actaccacag gtcgtcaaac      60
gcctcttgga caagctactg gattatattc gtcgggagtc tgccctccg tctcgggacg      120
gtctttcagc gactctgctc ctattgcgaa cgctattggg cttgccgtgc aggtatcggc      180
tgggtagggc gaagcgcatg ctcatcttgc cccgaggggg aactttcttt ttcttgggag      240
agctatggtg gatatcgatc tgctcccgga tgctccgatg ccatacgctg gtgggcttgc      300
cggaactgta tcgagagttg tcccacggga gctatttcg aagaggcatg gactctcgtc      360
tctgtgttga gctatctgac gat                                     383
```

(2) INFORMATION FOR SEQ ID NO:816

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 383 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...383

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:816

```
ggggtaacct tcgctatct ctgagtcgtt tgcagggttcg aatgtcccac atcttacaga      60
tagtttctat ggggactcct gcttcagag taatcaataa gcgaangaat gccttcggc      120
atggtangtc aggtcttcct ttatgtcgcg agaaccgcaa ggcatttcat caggcgacgt      180
anattggggt ggtacacatt ggaaagagt tgcgacgggt atcgctcgtt tatttctcta      240
tcaatcaagg gcttcgggca ggagtttgac acangcttga agttcgttt tcttcgacgg      300
tatttaagcc atanacttcc ttcacatcg gtgaaganat tgttcgtgtn accgataccg      360
catcagcata ngaagttccc gta                                     383
```

(2) INFORMATION FOR SEQ ID NO:817

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 678 base pairs

(B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...678

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:817

tacaggattg	tcataattgt	caatgagttc	cctcatatat	ccctgctctg	tataaggctt	60
gccatataat	aaccgacggg	atgccctcgg	aagagcacag	atcagccacg	ggtttatact	120
ccccgtcttg	ggaggtattc	ggatcnaagc	gatggacagg	gagtcgattc	gggctaaagt	180
attcggtgca	ttggccactc	ttctttatag	gcttttacga	actcgtcgcc	gaagaattgc	240
atgatttgtc	gtcgtttctt	tttttgtcaa	tcagatctgc	tattccttcg	ttctgaaaag	300
atcgaaagca	ttcaaaaaag	aatctccgga	tgaaccttga	taaccatttc	gcgatatgtg	360
tggaaaaact	cgtgagtaaa	taggtctaca	agtcttcttc	ttgcatcgaa	agcgcgagat	420
tcaggccaag	gaaaatagca	tatcgcgtag	actggcatcg	ggaatagtgg	caatcagaaa	480
gaggtcgttc	atagcggatt	ggatgaccag	gctcgttcgg	gtaagtattt	ttttgtcttt	540
catttgccct	gtacaatagg	gtgagaaaat	ccgtatgcag	aagaaaacgt	cggcttcttc	600
tcgtttacgg	gcgagccgac	agatatattg	tctgaggcaa	gaaggcatat	tcgtattgag	660
cnaggatgtt	caagattg					678

(2) INFORMATION FOR SEQ ID NO:818

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 2941 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...2941

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:818

tcagagtata	tatatagacg	aaaagagtgg	ctactttgaa	cagaaatatt	agttgaacac	60
cccanacctg	tagcagaacc	agccagcaca	gcttgccaga	aaaaccttat	ctcacgaatc	120
atcagtaagc	ctccgttttg	ggtatgcgtt	ttcctcctcc	agcttttgcc	tctctatatc	180
gatcttgttc	aggatccata	cacatccgtc	agcctaccga	agtcggcaga	caggattaca	240
ggtacgcact	gaacgaattt	ctctcggcca	aaggcgtatc	cttgcccttt	atctgccac	300
acgtccgacc	atcagggttag	cagggaagat	ggatgaatac	ccgtcgttac	taccgtatct	360

```

cctgtgcta actgcaegt acggggcaga tcgtcagctg ggctacattg ctcccgggct 420
tctccacag aatggaacct aatattcgt tccettgagt cggcaactga gtttgaattt 480
cgggttgatg tcgggatcac aatagcataa tgatctgaag cagccgttac ggcacccaca 540
cacccgtagc cgacactaca cccatttccg gcagtacacc atcggtcttc ccttatctat 600
ggatcatgaaa ttctccaccc tgttatagga ggcattgcc cctgtgctct caggtagtcc 660
atctccaccg gttgcggatt gagggatccg gccggaacag tagggggcgt acagaatcgg 720
ctacggctgc atcaaagctc tcttgagcga aatgtactcc aactccaacc gtgcattggc 780
atcggaagca tacgattttt ctacgcaga ctcatataac tgcgcacttc gccgtcaggc 840
tattgatgcg ccccgtcagg gcattggcta ccgccattcc ctgcctcgat ggtagatgct 900
atcgttgaag agtacgacaa aggtaccgt ccagaaaaa gaaacagtag ccaatgttga 960
tgacgtacta taaactcaat agcttacgca tgttagagca tgctggaaga aggtttttcg 1020
gactatctca tcggatcagg aagttgaatg tgtccacgta ttaagcgca atccccgtcc 1080
cttggctaca gccaacagag gctcatcggc tacttggaag gtgatacgaa acgatcggtc 1140
agacgcttgt ccaaaccgcg caacatagct cctcctcggc caggaataca ccgttcctta 1200
cgatgtcggc ataaagtctg ggagggtttc ctccaatgct ttgaggatgg cagcttcgat 1260
cttcacgatg gactctccag acaatgtgcc acctccttat aacttacggg tatcttcttc 1320
ggaggggtatc catctggctt gcaccgcaga ccagataggt ctcgggcggt gagccaagtc 1380
ttccgaagct gcacctacat tgattttgat ctgctcagct gacgtcccc gatctttaca 1440
ttgtgttcgc ggcgcataata gtccataata cattggtcag ttcatacccg gctacacgaa 1500
tggaactggc catgacgatc cgcccagtga aatgacggcg atctccgttg taacctcacc 1560
tatatccaaa tcataatttc ctccggagcc aatacatcga tgccgatacc cacagcacag 1620
ccataggttc atatatcata tatacgtcac gccacctgc atgctcctgg agtcgcgcac 1680
ggcagcatc tcgacttccg tactaccga aggtaacgca tcaccatgcg gagcgatgga 1740
tggaatccag gatgcttctt accgtcatac ggatcatacc gcttatcatc tgctcggcag 1800
ctttgaagtc ggcatacacac catctcgcaa ggggcgtact gtcctgatat gctgggtgcc 1860
ttctcataca tctcagcagc atctgtccct actgctatca cttcatccgt gggcgatcga 1920
atgctactac ggaagggttcg tccaagacga ccttaccatc ttgatgatta tcgtattagc 1980
cgtacctaag tcaatggcca attcctgtca aaagaaaata atcccatctt gttctgtatc 2040
tgtagaaaag catttccttg cttgtgacgg tacgggagtg ctataccccg accattctct 2100
tgcgacagcc tattttctat gtttttgtaa atgtttgaaa tgtcttacac ccgtcacacc 2160
atggcaatac ctttttttgt ggccctcttc atgctcagat tgcctaata gaaacctccg 2220
gctgaatgat agcgcgaata cctgcttcgg ctgcatctcc acacaatcg caaaaggaaa 2280
gaaagcatcg ctggccatga cagccattc aggtcaaagc cgaaattccg tgctttatcg 2340
atagcctgtc gcaagcatcg actctggagg tctgccaac tccactggca caaagttggc 2400
ttccttgacc aaagtaatag cattactctt gctatgcttc actaccttat ggcaaagatg 2460
aggtcgtccg tttcatctgc tgtaggcact acgggtgttc aggcttgaaa tcgacagtct 2520
tggtgtcac accatccacc tgctgcatac cacaccgcca aacatggagc ggaactgcca 2580
ctgctcacgt acaggctttt ctgtagaagt ataactctgt tcgtcttgcg tgtcagatat 2640
tccatgcagc attatcgtag tcgggagcaa tgatcacctc gaagaaaatc ttgtcatctc 2700
ctgagctgtc tccctatcga taggagtatt tgtaaccaat atgcgcaaaa agccgatccg 2760
ggatcaccgg caagagcagc ctgccaagct tcgtcagtgt accgcgcgaa gctatgccac 2820
agncatttcg tatgcttgaa ggtgcaaaan gtgggggcgg aaaactcact gataagcgat 2880
accgcacttt catgtctgca attggtgtag gagatttctt tttcttgag cttatcgata 2940
c 2941

```

(2) INFORMATION FOR SEQ ID NO:819

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 2313 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...2313

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:819

```

gggaaaaggg cgactttttc tggagtttct ggaaaagcaa atgtaggtaa agtancgata      60
aagggggcga gaacccccct cgccgaaaga ccaagggttc tgatcaacgc taatcggatc      120
agggttagtc ggggcctaag gataagcgaa tggcgattcc gatggaagaa ccggttaata      180
ttccggtact gatacaagag cgatgtggtg acggagaagt gacagtccgg ccgtctgacg      240
gaatagcggg taaagggtgt agatgttgat cggggtaggc aaatccgccc tgaggtcgaa      300
cctgacagta cccggagtac aagtacgaag ggataaggac gtaaccggct cccaagaaaa      360
cccgtaaagc atatttctgt gttaccgta cctaaaccga cacagggtgt tgggttgagt      420
atactaaggc gctcgagaga tcgcggttaa ggaactaggc aaaatggtcc tgtaacttcg      480
ggagaaagga gcctgtctcc ggacaggccg cagaaaccag gcccaggcga ctgtttaaca      540
aaacacaagg ctatgcaaaa aagcaatttg aggtatatag tctgacactg cccggtgctg      600
gaaggttaag aggaggagtc atcgtaaga gaagctcgaa ttgaagcccc agtaaacggc      660
ggcgcgaact ataacgggtc taagggtgca aattccttgt cgggtaagtt ccgacctgca      720
cgaatggtgt aacgactggg cactgtctca accgcgatct cggtgaaatt gtagtatcgg      780
tgaaatgccg attaccgcga acgggacgaa aagaccccggt gaacctttac tatgctttac      840
attgtatttg ggcatacagat gtgtaggata ggccggaggc aggaagcggg tacgccagta      900
ttcgtggagt cgatgttgaa atacggccct ttgatgtttg gatactaact cgcggcgtgc      960
gaggacagtg tatggtgggt gtttgactgg ggtggtcgcc tccaaaagcg taacggaggc      1020
ttctaaagga cctcaggccc gattggtaac cggtcgcaga gtgtaatggc acaagggtct      1080
tgactgggag acaacaaggt cgcacaggta ggaaactaga gcatagtatc cggtggttcc      1140
gcatggaagg gccatcgctc aaaggataaa aggtaccggg ggataacagg ctgatcactc      1200
ccaagagctc atatcgacgg agtggttggc acctcgatgt cggctcgta catcctgggg      1260
ctggagaagg tcccagggtt gggctgttcg cccattaaag tggcacgcga gctgggttca      1320
gaagtcgtga gacagttcgg tctctatctg ttgtgggcgc aggaaatttg cggggtctga      1380
cactagtacg agaggaccgg tgttgacag acccctggtt acggttgtag ccgccaggtc      1440
accgcgggta tccacgtctg gtaaggataa tgctgaaagc atctaagcac gaagccggcc      1500
tcaagataag atttccataa tagggtggtt aaagactatg accttgatag gctgcagggtg      1560
tatgattgta acaattaagc cgagcagta taatagcccg aacttttggt catcccgagg      1620
atgcgtgata ggttggtttg ttgcccga aa gcttgaggaa ttatttttgg cctttcgata      1680
tgtcgattgc cttttcgaag tattcagggt gttatacgtt ggggatccac ctcttcccat      1740
tccgaacaga gaagttaagc ccaagggtgc gatggtactg cgtcacagtg ggagagtagg      1800
acgccgccgt ttttaagaag cgtgagagag agggggggat aggatctcca cctcctccc      1860
cgaaaaaaag gtgaaggaga gagtctcgaa tccgaggctc tctccttttt tttttctctc      1920
tctccaaaaa tcattttgct tttctctcta tctctcttct ccttttctct ccttctcttc      1980
ctcccccttg ctgcgcgtta ttcctctaaa gatcgtagc caactatctc attgttogg      2040
aggtaccata ggtagccggg acggatggat agcccatcga gacgagcagc cggatataat      2100
tctccattgt gcatgatgaa ctttgcgaa tgctccgaat ttatagtcta cgatgttggtg      2160
tgatcgctgt agagaatgat ccgatcggga cgacgtgtt cccctccggg aggagaatat      2220
cctgttcatt aagaactcgt ccgtaccat cgaacaacga gacaatcgac tgtccgaagt      2280
gacaacagat aggcgatcga ccattcgatc gcc      2313

```

(2) INFORMATION FOR SEQ ID NO:820

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 843 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...843

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:820

```

gggaaaaaag attacggcat attgagcgtg ttattgcagc tttggtacat atcgaatacc      60
tcttcaccgt agacgttcc gttttcgacc ccccgcccaa gtgcagagcg gtgtaatacg      120
tctgacacgc aatgaccgca aggaactcca tgtagcgaga aagccttgaa aacagtgggtg      180
aaaacagctt tcggacgcgt cggaaaacgc ttaggaactc tcttcgcggt atcttgccgg      240
ccggtttgat cgtttcgacg aacccgtttt ctcgaagcga ccggagcagt tgtcccggat      300
gatttcacgc cacttacact cctgttgacg caatagcatt ttctccccc tgattaacga      360
attcttatgg acttcacgaa agaatatctt caaatcttcg cgagatcatc gacaaaaagc      420
gcgatgcaga tgctctcgac cgatgagcaa gctccacccc gaggatattg cggctctcta      480
tgacgagctg atctggacga ggctgtctac ctctacctcc tgctcgatgg agaaaaggcg      540
gtctcgtact cttggagctg gatgaagatg agcgaaacaa ggtcctcgaa ggattccttc      600
cgagaccatc gccggaaaat ttgtcggcaa catggagccg acgatgcggc cgagctgatt      660
cgtgagctgg acgaagacca gcaagagaga ttctcagtcg ggtgaccgat atagagcagg      720
ccggagatat tatcgtctgc tcaagtacga agacgataca gccggtagcc tcatgggtac      780
cgagtataaa tcgtcaatga gaactggagt atgcccaagt gtatcgaaga gatcgtatgc      840
agg

```

(2) INFORMATION FOR SEQ ID NO:821

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 415 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...415

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:821

```

ggcgatgcca atatcagcaa gcagattcgc tacaaaagcc gtatcaacat ttgaagaaag      60
aactacggga ggtaaaggaa cgttatcatc aggatagttg cgactggaag aaatccgggc      120
gaacaaacag gggaatagag catacggcag agagttgtat ctgatgaagc gacccgaaga      180
gatcattttt ctgatcagga tagcgtccaa gacaaacaat aacgaaaata ggggcagcag      240
ggatgaccca cagcagattc gtgagataag ctaccgtgtc ggaggtctcc ttttatcttc      300
ggagcagcat cccagattgg tacgctttgt tgcccggana ttactcctac gcattggggg      360
cggtactcct atctgcttcc ctatgccctg acccctgttt gcggatttgg atact          415

```

(2) INFORMATION FOR SEQ ID NO:822

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 600 base pairs

(B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...600

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:822

aatacgtatc	tgctcacgat	ggtcaggat	gtccggccaa	gtggcgtag	gtcagcagac	60
actgaaaccg	agcattgata	tcgttggtta	gatctaagag	taaaccgagg	agagaggggtg	120
tgtcggaatc	gcaaaatgag	gcgatcaaac	acaccctctt	tctttaaggc	acgaaagagt	180
tctccatgct	gtttctcgaa	tacagtgaga	taatcggaac	tcttgattaa	ggtccttttt	240
aatcatatcc	taacgactat	gcttgataaa	gatactcttg	cccaagtggg	ttctactttg	300
cccaactgaa	aaagtcctat	acattacgac	tcaatgctca	tactctcatc	cttctacaa	360
cgaggcgaa	gaaatgctcg	atgggcttgc	atcgtttcgg	atcatgttcg	tgcggaatac	420
aatgcggcag	atgatttttcg	ttcgatctgc	tcgtagacgg	agcggatagc	gggatcggct	480
tccgtggtat	ccgggtggcc	atgaatttag	ctcaactgct	cttgctatct	tcaacaatgc	540
ggtatcggaa	ggaatatccc	cgatgaagga	gtacaggata	gaatccgcgt	atcaatgggc	600

(2) INFORMATION FOR SEQ ID NO:823

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 491 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...491

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:823

gatggatttt	tcttcctata	caatcctttg	ccttaatcgg	ctcgatgcag	gataccggct	60
ttcggtatac	ccaagtata	gcataagga	cagaatgtga	acaaaatcaa	gaatggatat	120
gaagcagaaa	aacgcctata	accgactact	aaccactacg	acgatgtcct	caccggacgg	180
aaatggtggt	cttgccctat	atgcactgtc	tctggaaaac	ggacgacaat	atcatcgtag	240
gctcgtgctg	gacatgattc	ccggcaactt	cgagggcaga	atactcgacg	tcccgtagga	300
acagccattt	tcacctatga	caaatacagg	cggatgcccc	aagcgagatt	gtcgggctgg	360
actattcgca	ggaaatgctc	gacatagcag	cgtgcgcttc	agtgcagagc	aaataaccaa	420

cgatcgctc cggcaaggcg agtcggcagc ctgcctttcc cgatcggggt ttcnacctcg 480
gctcttcgat a 491

(2) INFORMATION FOR SEQ ID NO:824

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 926 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...926

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:824

tggcgcgaga atgaaaaaaaa tctcgcgccca caacgaaaaa aaagtcgcgg tattttgcag	60
aaaagcggtt ccgctttttc tccttttcac gtcctgtgatt tcacccctcg ctccggctgc	120
acacccctct ctctgcgaga atgaatactt tcaaataccc ccccccgcga aaaaacaatc	180
aggacacaaa gtgggggtat atgccactct atgtcccgat tgcgttagaa gggaaatgtt	240
gcttaggatt cgccaccgtt atcgtctgtg tgtgggaagt attttgaacg agaaaaacgg	300
ggatcgtcta agccgaagca gatttattcg atttgaacat cagtccacct tgcgatcgg	360
cgggattgcc gtcaggatat agtcgtaaaa agcttttcgg cctogttgcc aaagataagc	420
ccctgaccac cggagggata aagttgttcg tcttgattcg gaaagtagta ggaagcaaa	480
ccggattgaa tcggccggga tattcatgac gatgttcagt gctttatcct gcgtcttatt	540
acctgacaag agactgcgtt cgaagtggct gtgtattctg tgaatgcact cctgcaccct	600
tttgtgtcgg actgcaaatg gattggtaac ggnagggttc ctcactacca cacgcaccg	660
acgtttgagg tcaggattat cttgtgtccc acaatgatgt ctgacgtaca tgagcctgaa	720
ccgggtgttg cagccatgac aacgaaatcg taccgttggt gttagtagca ccggttactg	780
catcccgcta tatgtgacgg tgatcagatt gttctgctgt gttacgttgc caaattcgga	840
taataagccg ctttgattgt gcccggtgtc tgcccatcgg taaggccaag taagtatgat	900
ccacttcgat cttacctttc cgggga	926

(2) INFORMATION FOR SEQ ID NO:825

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 527 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...527

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:825

```

ccttggaacgg tccctcaat atttgtctca gaaatggatt ccttctcgtt tttctctgtc      60
agtgctaaga caaagataga catacgaaac cataatgcga taatatctat gctaatacat      120
tcaatgataa tcatatccat gcattagaaa gccgaaaaat cacttttccg gtatcaaaca      180
ggatattgag atgaaaggct tttgagcaaa gggcttcttt tcggtggagg aagttttgtt      240
ttcaaaaagg aaagatcaat agtgatata ataccgatgt ctactgctt ccatacccca      300
tataaatgga aattctattt atccttattt tcatgaacac ataaaaaaga catggaaaaa      360
ggattcaacg cctacgtagg tggaatgtat ccgtattgaa taatatatat ctgcgagggtg      420
agttttccat gtogatgaat gaatgaactt aagatggctt atcctacgag tataaacgag      480
gaaacagccg ttaagagta ttcaggcctt acattagtct gatgaaa                      527

```

(2) INFORMATION FOR SEQ ID NO:826

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 531 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...531

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:826

```

tcgactctag aggatcccc ctcaacgaaa tgggctatgg taccttgggg atctttatcc      60
tacggacaat ttcggaatct cggagcgagg tattacttcc tctacaatga gtacgagatc      120
gtccctatg ccatggggcc gatacagtta cgctgtcgtt cgattcgtt gtcctgatc      180
tcaaggagga ttcgccactg ccttgctctc tgccggcaag aatggatcga aaagataaaa      240
accaacgggt ttcctcgcga ccaacttctt caaaagaact atatttgtag ctccgtcgat      300
agtgccatgg cagttgtaaa gatgatagtc acatcactgg aagtcttcgc tcaagattgc      360
gtgcataatg gtcggagaac ggcttgctgc atccccgaa cgatacagca ttcttggaag      420
tcgcataata tctgaagaag aattcacgcc ggacgactgg ttcgatctca ctgcgcagaa      480
tggtgcctg taagtctttc tacggtctat aataccctta ccttgctcga a                      531

```

(2) INFORMATION FOR SEQ ID NO:827

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 431 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...431

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:827

```

gggaagtggg acgacaggta aacagccgtg aagcggaacg gatgtcggag atctttggca      60
ggcatccatt acgattctca aaaacaagaa gcacttcccc ccctctcgga gggaaaccgt      120
attgcatgcg tcaatctaga tgggtcacct ccaatacttt tacacaagag ctgggggctta      180
cgagcaagga ctgctatcct atgccaaagg cagcaacagt acacgtacac aagagttgct      240
ctccaactca aggggtacga tgctgtgatc gtcacagttc gacatacaca gccgactggg      300
caggaacgtt tctccaccgg ctgacggaac aaaaccacac tgcctcgtct tcttcacatc      360
gccctatgtt ngccgatagg attccggcgg cttggacaaa gctccgggct atagtcennt      420
ggcatatgaa a                                     431

```

(2) INFORMATION FOR SEQ ID NO:828

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1343 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1343

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:828

```

gggccgatgc tttcagctcg tcttccgatt cggaacgagt agcgcgcgatg tgctggcgat      60
ccctccgcgg cgtcccatga tactcatgta gctgtcgcgg cgagccgcca ttggaactca      120
tcttccctgt agccgcggaa gacganaggg tgtggctgtc cacaagccc ggcagtagcg      180
agcgtcccgt ggcgtcagct cccggcagcc ttcggtcatg gacggggcta cgtccgccat      240
gcggcggcga agcgatgatg ccgtcgcgga taactactgc ggcagggcct tcgaggtgtg      300
tatctgcccc atggcttcgc ggccgtgttt ggcttcggag cctggcaggt gacgaagctg      360
ggcgatattc ttgatgtaga gggtcattgt tggggggtgt taggcattgt tgctcggtaa      420
gaagcttgcc gatagaacct cccacgccac ccggaagagg gtggcgggtg gtatctctat      480
ccttcaaaca aaaacatgct gacgtttact ccatgatccg tgattcgagg atctgatcct      540
ggagaagttt tcgatgccga ggtagtattc ggcacagtcg atcagtgtcg catgggtacg      600
agtccgatca cttecgctgcc tacgacggat acgcggttcg ggcggcttcc atgcgtacca      660
tctcatgagc gcgatagaca gccgtctggt gaagtcgcgc aggttcattg acacctgcac      720
gatgccgcgg tcggtagctc tacgcccatt gccttgacga agcgcagacc gccgccgagg      780
aagctacctt cttggcgatg gcgtccgcga tggagaggtc gttegtattg aggtcacggt      840
gtaagcgacg agcggcatgc gggcgccgac tgccacgggt ccgctgtcgg gtgacgatcg      900
gccgggcccga agtcgggaat gccagtcggc tcgtgtatct tctctgccat gccttcgaac      960
tcgcctttgc ggatcttggc aggttttcac ggtggggagc ggtagccgat ttctcataga      1020

```

ggaatacggc	acgccgtact	tctcgccat	cgtgcggcct	acctccttgg	cnaggggtgcg	1080
gcgtcttcgg	cagtcacatt	cttgatgggg	ataaagggga	tcacgtcact	gcgcccatac	1140
gggggtgctg	acccgtgtgt	ttggtcaggt	cgatcactct	acggctatgc	caacggcttc	1200
gagcactgcc	tcccgaaggg	gctcggttcg	cccactacgg	tcacgacgag	acggttgtga	1260
tcctcatcgt	tgcttagttc	agcagcttga	cgccttcgcg	cgtgcggaag	gggtttacta	1320
tctttcgatt	ttctctttgt	cgc				1343

(2) INFORMATION FOR SEQ ID NO:829

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 458 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...458

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:829

ttcgacatcg	aaagaggagc	ttccgatgag	gacagtctcg	ttgccggtag	attggcccca	60
ttgacccaaa	gctgccaaac	gctgccaaact	gcgtatgtac	cgtaaagctc	gtgaatggct	120
ttgttcccag	cgggtatgcg	ctaccatgat	gagaatatcg	gatcggacga	tgctgctctc	180
gcctgaaggg	agaacgggag	tcggacatcc	agcagatcca	cccctttcga	gccgctaccc	240
cagcgagagc	tacatagtcg	aactcggagt	cgtgatctc	tccataacag	tacagtttagc	300
aatagagata	gttggttgatg	gtcggggcga	atccagcttg	acacgccttt	ccatggttga	360
atcttgaatt	acgggacggg	gatactatgc	gcacccgtca	atcctccgga	tatccacgta	420
aacttgattt	gttttttgat	gtggcaatct	gcacatctgt			458

(2) INFORMATION FOR SEQ ID NO:830

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 768 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...768

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:830

tacatacggc	gctgacntc	gatcgtaggc	tcgaaatttt	cgaggncgat	gtgcgaaaag	60
cctccacgtc	accatcctct	gcacgccata	aagccgctct	tgtgaagtgc	cacggtcggc	120
tcggaaatga	acctccttgc	catagcgtgc	accaatagat	ctgtcagttc	actgagcatt	180
tcctgccgaa	aggaggcata	cgtttttgca	tcgggtttat	attttgaggt	ttcaccgttt	240
gagcttcgtg	tttacttggg	caaatgccgt	gtatcctccc	accggaagca	aagcagcgac	300
catgccaacg	ccagcgatag	ctgtttttctc	ttcttcatat	tatactattg	aatttagaat	360
gaatctctcc	aaatgtaacg	acaatcgagg	agtaggatat	aaattttgaa	taaaaagcag	420
ctatagagtc	acgcagtagc	gttgtggaaa	taaaaagaga	cgtacctccg	gaggggagat	480
acgtctctgc	ttttcgtttt	tgtatctgct	ctgtatgagc	aggggagtg	aatcagggat	540
agcaaacgcc	ctgagctacc	atagccttgg	caaccttcat	gaagccggga	tattggcacc	600
cttcacatag	tcgatgtagt	tgcggtcttt	accgtattaa	cgcactgctc	gtggatgtct	660
tgcattgctc	ggtgcagcca	cttgtcantt	cttcattngt	ccaaacnagg	tgcatagcgt	720
tctgcgtcat	ttcgaacctg	agcaagaaac	accacctgca	ttaacagc		768

(2) INFORMATION FOR SEQ ID NO:831

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 457 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...457

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:831

cgctctatga	tcccgaagaa	ttttacaatc	agacgatgat	ccatagtcgc	ggatggaaga	60
gctgttcggt	gtaaaacccc	gagtgtctgc	caatacaggt	tgatcttctc	cgacaacatt	120
gccaccaag	tggcagaaat	gggttttaag	ggatgctcac	ggaaggagcc	aaacacatac	180
tcggatggaa	gagtccaact	atctgtacaa	agccggatcc	gctccggagt	tgtccctctt	240
gctcccaatc	cgaggctgag	cgatgccatc	agtgccatgt	tcacccgcta	cgatggaacg	300
aatatccct	gacggcagac	aagatgatcc	gttggatcga	agaactcccg	aagaggagca	360
gatattcaat	ctcttcata	actacgaagt	ctgggatcgc	tccatccgag	gagtcgggta	420
ttttcgattt	ctttcgtgca	cccttctttt	ggcgaaa			457

(2) INFORMATION FOR SEQ ID NO:832

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 525 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...525

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:832

cggctcgcag atgcttagcg ccaaggcggg aaagagccgc agcggaacct tatacagcag	60
ggaatagaaa tgagcattat tggccggatt gtccatcagg caaaatccag ctcatgcccg	120
gtacggatca tccaacggga atcggagcgt tgagagggaa cgtcttctct cccaacaaat	180
tcagtgtcca tctctctaac gaaggggtga caaatagggtg tcgcgcgtta tgcctccgcc	240
accacgacca tataggcaga atgaatgcgg taggcggact gctccgtggg caacctctac	300
tcgaagaatc agttgcaaac gctgtattgc taccgtggga agatcctgcc cccatgccaa	360
caatccgggtg agtagcagaa gcggcaaaac aatgcgtatc gtctattcgt ttctcatcgtc	420
gtcgaattgc aatcgtctga tccaagagt tcgtctctta tatcttcacg ggaagcaatg	480
gcttcgggtg aacctcggcg aagctctcgt ccgcatcggg tggttt	525

(2) INFORMATION FOR SEQ ID NO:833

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 523 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...523

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:833

gcgtatatcc gatgttggat atgaatttcc cgaccgtgga tccggccgac cgtatgcact	60
gacagagcaa gagcagaata tcgtagatcg tctgatggct gttttatgcg gagtgaaaag	120
ctgcaaaacc atctcaaata cctctatgtc atggcagtat gtacctgacg tataatatga	180
atctgctcta ccatgctcta tccctctgaa caaggataag tcgctcaaga aggtacgggt	240
aggggcaaga cctatgccgg acgcgaattg ctcgataagg tggaagagat gatcgtaccg	300
catatgtggc tcccagagaa agcgatcaga gaattgcggc tgtgactaca tgtggtacct	360
ctggtgcgga ccggattctc ctcttttcga caagctatga tgactacttt cgagcgttac	420
ttcatcgaag ataaggctac gatcatgagg aaaagggtta ctactacgct tatcgtcagg	480
agaaagccgt tgtgagatga tcctcaaaga gtttgggctt gaa	523

(2) INFORMATION FOR SEQ ID NO:834

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 531 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...531

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:834

ggccgatacg	gtgggttatca	ttgatggtac	tattctcggc	aaaccgcaaa	cagagaagag	60
gccgctcgga	tgctacgtac	gttaagcggg	cgtacgcaca	ggtggtgacc	ggtgtgtgca	120
ttagccaccg	gtgggagaca	agggcttctc	gtgttccagt	ctggtaacct	ttgcgcattc	180
gagtgatgag	gagatcatta	ttatctcgaa	cgtatcgcc	cctatgacaa	agccggttcg	240
tacggataca	ggaatggata	ggctacatcg	ccattcagcg	agtggagggt	tcgtctacaa	300
tgatcatgga	ctaccggttc	atttgctcta	taatgaactg	aaaactttgg	cgaatcaaat	360
taaagtctct	atatttgac	cccgaagtgt	aggagagata	actaacaaaa	caatataaga	420
gcaatgaaaa	gaacatatca	acctctaacc	gtaagagact	gaacaagcat	ggctttcggg	480
ctcgtatggc	acggcaaatg	gccgtcgtgt	attggccgctc	gccgtgcaaa	g	531

(2) INFORMATION FOR SEQ ID NO:835

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 604 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...604

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:835

ataggggaat	gtttggcccg	acgtatatca	gcaggtgggc	aattctgctcg	agtcgtacgc	60
caatcgaacg	acagagccat	ccctcaagcc	atcgcccggtg	cctcacctac	ttcggcgaat	120
actggggcaa	tcggctcttg	gctgcagcgg	tgtctctgac	gagctgcggg	acagtggagg	180
gtataggact	tgggaaaaga	ggagagggct	gaagactgac	cctcaagtac	tgccctatgg	240
catattaaca	atagaatcat	ggtagccagt	atagataaag	aagccgttgc	cggctggagg	300
cagagatatt	ccccggcacg	atccacctga	tcgacaaacc	ccagccatcc	ccgaagccat	360
aaggctgcta	tcggccagtc	gcacgatcgg	ctcgacacgg	agacccgccc	ttctttcgtc	420
cgtggcgccc	gtccgtccgt	actctgatgc	agatgtccac	agaaacggac	tgcttcctct	480
tccgactcaa	atgatagata	taccggagga	actgcaacag	ctactggaga	atccccggcaa	540
ctcaaggtag	gactgagcct	gagcgatgac	atgacgggtga	tcagacgggc	aaaccgatcg	600
aacc						604

(2) INFORMATION FOR SEQ ID NO:836

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1610 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1610

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:836

```

aatatacgcc aatcgccgtg caannnaggt ctcttatggg caaacattta gcaactttga      60
acgccttgcc atcctagagg attacctctc tggggcacga gccaaagggtc cattggaagg      120
aaatatggca tcagtcgtgg tcttattctc aatggcttcg taaatttgga ctcgaagata      180
aagttcatcc ggtcccatga aagcgtecca atccccccag agtgagctga ccctcaatga      240
aaaagagagt tggagcaact acgtaaagag aatcgtgtcc tcaagagtcg tctcagcgag      300
aagaactagg gcatcaagcc tacaagctac ttgntgagtt ggcgaagaaa cctacggcat      360
ccggatacga aaaaactccg aagccaagta gtcaccgttt atcagagccg gagcgtagcc      420
atcctattgc tcggctctgc gactgcttgg ctttagccgt caggcccttt ataaacgtca      480
tctcaacgat tagcacaaca tgaggaggat gtccatgca gtagtatcat ccaatattgt      540
ggcacttaag acaagcagag cacctacctc aagccggctt ccgagagcca tgggtgctttg      600
tcagcaatac ttccggcccc agttcacgct tggggcgcat gcttttgccg cctactcaga      660
cgccatggta tgatgctgcg caaacgtctg tgccgccctg gacaaccaac tctcggcata      720
ggctctacaa gtatgagacc tgctcaatac agagcctaag tttgtgcctc aaagacctgg      780
ggaatccttg tagcagacat cacctacgtg gcttaccaag atgggtttgc ctactctccc      840
tactgaccga tgcctatagt cgctgtatcg tagggatttg ctacatccga ccctggaagt      900
tgaaggctgt ttgaatgctc tgcataagc cttgctttct acgatcaaca tcaaattgat      960
acgaccaata tgattcatca agcgaccgag gcattcagta tgccggtaag agttacaccg      1020
atctgttgct gggcgaggct ggcgcacag tatgactcag acgggagatc ctcagcatat      1080
gcattggccg agcggatgaa caatacgctc aagaactcgt ggcacattcc tcttcgaagc      1140
agtcttttga tcaagcactc ctttctgtag aacaagcgtg cgcatgtaca acgaggcgcg      1200
tccacatcaa gctctaaggg cgaaacgoot atgcaagtca ttgcgccaga gtctaaaaat      1260
ccgttactaa cgagagggag catgggccna gagattgccc ccgagctata ccgaaggatg      1320
aattcagaca aagagctaac tttgctcgtg tcaaccgaaa ttagacctaa ggtaaggggt      1380
gtcaacctaa agtagaatta tagaagaac cagtaaacca atgtagaact atcccgccca      1440
actgtcaact tttttcagta cacgtcactc cgccgcaaaa ccagaatttg cgctgagat      1500
ttttttcggt ttggttcgat tttttcttt tctcgcgcc aaacgaaaaa ttttacgctc      1560
ggcatttttag ggacatgaaa caagtttttt ccgcgccact tcgcagggga      1610

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(2) INFORMATION FOR SEQ ID NO:837

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 463 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...463

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:837

ggaaaaagtc	gaacgagttt	tttctcgttt	tggcgcgaga	attttttact	cccgaaccaa	60
aatgaaaaaa	ttctcgaacc	acatcttttg	gccccatgat	gatgtttttc	cggttcgtaa	120
agagatggca	gaaaaaattg	ccgagcgact	gttggtataat	tggattttgt	ttctaccttt	180
gcaatcgcaa	aagaacatgg	gcagttacca	gagtggccaa	atggggctga	ctgtaactca	240
gctgggttacg	ccttcggttg	ttcgaatcca	tcactgcccc	ctcttcactt	ttgtaaaaca	300
agcgtaaggt	tcgcggaagt	agctcagtcg	atagagcatc	agcttccaag	ctgagggctg	360
cgggtttgag	ccccgtcttc	cgctcttatt	gaatcaaggg	cccggatggt	ggaatggtag	420
acacgaagga	cttaaaatcc	ttggccatta	tcggctgtgc	ggg		463

(2) INFORMATION FOR SEQ ID NO:838

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 329 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...329

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:838

agctccgcat	cgtgcctgtg	gnagnttggc	tcgtggccac	gcttcgcagt	ttggtgccgc	60
ggtgcaagag	cagacagccg	aaatcaaagc	gcatgatgca	ccatgctgcc	catgcgcaat	120
atcatagcct	cataccgccc	cgaagccccg	ggcgtatgct	actgatggct	cactgggata	180
cgcggccggt	ctgcgacagg	atgccaaacc	cgctatgcac	acagagacct	tcgacggctg	240
ggacgtggcg	gcagcggaat	taggcgttat	tattggagat	agcgcgctat	ctggacaaca	300
gaaagatttg	ggcatgggca	tcgatattg				329

(2) INFORMATION FOR SEQ ID NO:839

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 605 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...605

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:839

cccgaccagc cattcccttc gcgagggaag tctatccact cgggatgtcg aattcattgc	60
ccatgaaatt gagataacca ccattcatcg tcgtggcatg aagagacgga tcatcttcag	120
cagtgcaatg cctctgtcca cgctatgaca caactctgct tgttcatata ccaatacata	180
tcggcatcga tcaggcaaat atgattgtct tgtccccgac caaagcctga tcgtgactct	240
cggcaagctg atcgtctttt cctcctgacg gcgattggtc agttgatacc agattcgccg	300
ggattccagt ctctgtcacg atgctctttg atgagcttga tccgaaatcg gggatattca	360
tggctaaacg gtagtcaaag ccatatcccc cactgccaaag ggaagagcta atccgggcat	420
gccgcttacc tcttcggcta tgtgattgca tcggggcaaa gttcgtgaat gagtttgttg	480
gccaagatca ataggcaata gcctgcgcgt cctgatggcc gttgtaatag ctgtcgtaat	540
gtcgaacctc tcgccgagtc catgactata gtatagcatg gacgtcaccc atcgaaacgg	600
aagcc	605

(2) INFORMATION FOR SEQ ID NO:840

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 855 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...855

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:840

cggaaaaaagg ggaaaagtat agacaaggca tccgctcccc gttcacgcct gggaggaacg	60
tccttgtctt ttctgctttt gtggttctct ctgccgtttt tggtttatgc agagtctgca	120
ggatgtttac accacttcat ttctgatccc atctcctatt ccgagctgcc gccggacata	180
ggagtctcag gcaggcgccc gaccgcttgg acattatgct gaaagatcag ggtatcgtgc	240
ttctgcctat aagctgaagg ggttctctcc gatcaaatc tccccatcca aagccaattg	300
cacaagaaaa agagcatgcg actgaacaaa tgggatctgg tcgactgctc caaaaacaac	360
tggagacctc caccgaccgt gcagccatct cgccgaagac atcaaagcga cattctacac	420
tcgcaaaaag aaaaccgtac cgtagtcata aacggacaaa ccgtccccaa agaaggattc	480
tacgccttgc tccatcttc tcgccgagcg aagtgaccat atatggaagt gcagaagcgt	540

ggcgagtatc	gggtccgtga	atacgggaaga	gttttctatc	gacggattga	gagcgatttc	600
tccggtgaca	tagcggattg	ccccgatcga	tgatatcggt	atcgatccga	caaatatcag	660
aatgcaagtg	cgtgtagagc	aactaaggaa	caaacgtttc	gaactgccga	tcataacgaa	720
gaatgtgcct	gaaggttcct	ccttcgtcct	ctacccggca	aagtgtcgat	acagctcaca	780
ctnccacatc	gcactacaaa	gaagtatcgg	aagctgattt	gcaaacagcc	gtttctatcc	840
gtcctctccg	gattc					855

(2) INFORMATION FOR SEQ ID NO:841

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 397 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...397
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:841

gcgtccgaga	tctcacccaa	agaggcacgc	agccctgcag	ctttgaccga	aggtcgagca	60
ggttaccctc	tttcgtctcc	acgcatttgg	tgatagccca	agggtcttct	gcaccgcttt	120
ctcatcacgg	tgagagcgga	gatcgtagg	cgctctatct	gctgcttacg	aacagccgta	180
ttgtcgatct	caagaaatct	ataggatcct	ccttaggcag	acgatacttg	tttaccceca	240
cgatacctgc	tggtgcgagt	cgatacgagc	ctgtgtacgg	gcagcagctt	cttcatacnc	300
agcttgggta	gtccggtctc	gatggctttt	gccattccgc	ccactcctgt	acttccttga	360
tgagtgtcca	cgccttggtg	tttcgaattc	cgtgggtc			397

(2) INFORMATION FOR SEQ ID NO:842

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 880 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...880
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:842

tggcgaattg	atttcaacgg	gatctaccag	tggaatagac	ttcgaacgat	caatccggat	60
gacatcgagc	gaatcgaagt	gcttcgtgga	gcttcctcgc	tttgtacgga	tctaatagcca	120
tccgaggtgt	tatcaatatc	atcaccctac	agccaaggat	ccttttcgcg	tatctgcttc	180
ggctcgatac	gatagtgcga	cggacagaaa	tacgatgtgg	cagcaggagt	gaaacgtggg	240
atcttaccag	tcagtcgggc	gtacaatata	gagcagacaa	aagttatatt	ttggccgatac	300
agttcgagca	ggaactgaat	gttgcaggca	atacgacatg	gaaataaatac	aagaagttta	360
caatctctcc	gacggaaaac	ttatccttca	acttaccgga	ctggtgaatc	tgcgtaagca	420
gcactggacg	gataagatcg	atttctgtac	aactcctacg	atgtcaaagc	cggtgccaac	480
tggcgtatca	cgagacttcg	gatctggacg	tctcttatca	ttacgacaaa	tatagccgta	540
tacctgtctg	atcaagactg	agaacccaaa	gaaacttccc	attttcgaga	ggatatgcac	600
catttgcgag	cacaatacaa	tctcaatctt	gctgaagcca	ccttctcaat	gtgggtctgg	660
agtatatcca	tgataatgta	gcacgccccg	tctttcctct	ccgaacgacc	cgggggaaaa	720
gtccgtgaac	aacaaatcct	atacgacag	tacatatata	aagttacccc	caaactcgta	780
ttgactatgg	aaggcgcttg	gacaagcact	ccggattcgg	cttgtactat	acacgcgcct	840
gtctgccatg	ttcaagtgca	gccatgtcac	caatcgcttg			880

(2) INFORMATION FOR SEQ ID NO:843

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 571 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...571

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:843

agagaaagat	tcttatgaaa	agaccttgct	gatgtctgct	cgtaagcata	tattgtagcc	60
atcaggatat	tcgatcggcg	agaggccgat	ctgccaaagt	agggttgatg	cgcttccgcg	120
atgcagagac	agggcagact	cattggggga	taccgctgat	agctccgttc	ggaaagcgta	180
tgcggtatgcc	tatgaggacg	gcaagtagca	cttgccgttt	tgtctcaaagc	atgtggtgta	240
gatacactga	gatacgtagc	gggcaggatt	togtgcagca	gcttcttatac	ttattaaaaa	300
acgctcatga	gacactctct	tgccattcgc	tttgttcttt	ctgattttgc	atgctctttg	360
tctcttcctt	tctgaaggcg	caagagcttt	cttcataggc	aaactcgacc	gtgcagagat	420
gcaaatagga	gagcaggcag	tatagatatt	actatccgca	cggcagattt	ggcgcatact	480
catctgcaaa	acctactgat	tcgacgatga	gtcggatcga	aattttggcc	tttggcattc	540
ggatacgttg	ttgtgaaaga	tccgatcgtg	g			571

(2) INFORMATION FOR SEQ ID NO:844

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 398 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...398

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:844

cgactctcga	ggatccccga	ggagacgacg	gacagggtgtc	ccgcttcggg	ggggattgaa	60
ccctgctacg	atcctccaga	acgagtagct	agctgtctca	ttattttcca	tatactactg	120
cgattataag	gttatcgag	caaagatcgc	gaggcaaaca	ggaatgatga	agatggggtt	180
cttagcggtt	cttagatgga	ttagaatgga	aaagccgtgt	atctgttcca	atttctggct	240
tgccgatgca	gatttatgtt	gactgcagaa	agaagactgt	agtaatgaat	gaattcttaa	300
aaatggaccg	cgctatggg	aaggaaacca	gctacggcaa	aaaacaaagc	aataccatgc	360
caatggctgt	aatgctatat	cggacgagtg	gatataat			398

(2) INFORMATION FOR SEQ ID NO:845

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 374 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...374

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:845

gggctccaat	tcctgtctgt	tcgatggtcg	ggaagatcaa	agccaacgtt	ccccactggg	60
ctatatcctc	ggagatgaag	ggagcggagc	cgtattggac	ggctgttcat	cggcagcctt	120
ctcaaggggc	agatgccgga	ggggctggcg	aagctttcct	gcaggagtat	ggcctgacgt	180
ctgccgatat	tatcgaagtg	tctatcgaaa	gcctttcccc	aatcgcttct	tggccggatt	240
ctccccctta	tcgcgcagca	tttggacatt	ccggctgtat	atagccttgt	tacaaatagt	300
ttenacgact	ttctgttgc	gcaacgtgct	ccgatacaat	cgtctgatct	ccccctccac	360
ttcnttcggn	tctg					374

(2) INFORMATION FOR SEQ ID NO:846

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 392 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...392
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:846

ttcgaggcat	tcctgcgcta	tgggctcaag	cctacattct	tgactcctca	tccatgcagc	60
gcgctgtcga	gatgttcgac	taccgctcag	gagaaaaaac	gaatggaatg	cttaccaccac	120
ctatgaagcc	tatatcagca	tgatggagag	ttccaaacaa	agtatccatc	actttgtact	180
acttccgtca	ttggcagtc	gtaaaggatc	gtaaactgat	gatttgcaag	ctgacgtcct	240
ctgccataca	gggaaaaagc	ctcgctgtgt	ctatacttct	acgatgcacg	gagagaaacg	300
accggatatg	tggtntctgt	ccgactcata	gaacatctgc	tgtgaactac	gaatccgac	360
cgaggattaa	gaacattctg	gataaaacgg	aa			392

(2) INFORMATION FOR SEQ ID NO:847

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 517 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...517

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:847

aggaagtcca	tggcgacttc	tctcccagag	tgcgatacgg	acttggaattc	atatccccgg	60
catgttcgac	aaggatttgg	acatttcgca	atgccactgg	gggctaagg	atcggnccgaa	120
atacgtntct	tcattccgca	atattgctgc	aggatccgga	gcgttatcct	ttcttcgacc	180
tgagaaatca	ggaaggctga	tgcgaaacgt	gatgatccgg	actacatcca	caggagaact	240
gatggagtcg	tggtcttctt	tcgcgacgat	gttgctgtct	gagaagctct	gcttcggccg	300
tggcggaacg	tttccctcag	atcacctcgc	tcctctacgt	gataatacca	agtgcaacga	360
cacgataggc	gatacaggga	gtgctcctgt	acatggcagg	gaatacattg	aggaggagat	420
gcgaaggact	ngaagttcaa	gtcgggctta	agtctttcta	ccagaccaat	agccggcagg	480
cctaccaact	tatcggatag	cgcgcgaatt	gccggtc			517

(2) INFORMATION FOR SEQ ID NO:848

- (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1420 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1420

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:848

aaagtaattt	ttagtctggc	tatcatcttg	gcggcatatt	ctcaatgaag	ctcaaagtgc	60
tatccgcaag	ggtacgtttt	cgctcaacgt	cgggatggat	cggttctcat	cacggatcgg	120
ctgcatttat	gccaccgta	gacctcgaac	cggtatcatc	agcggctctg	ccagaggcaa	180
aggcgccatt	actgtagagg	tcgccttggc	tattacggca	cggaacacaa	tttctctgcc	240
atcatttagc	cactaaatta	gactttcact	atcagctggc	ttctgctgtc	gatgctattt	300
aggtcagact	ctgggagggt	atttcggcaa	tgataccggc	ttttctacgg	tattcatctt	360
ggagcgcgct	tctttgttca	gcgcgatttt	gcttgttctc	agaagtatca	gccggctggg	420
ctactccctt	tgatcatgga	gggttagttt	caggctataa	cggaagagtc	ctcttaacct	480
ttctgctacc	ctttcgacat	gtggatacgg	gtgaacttgc	tgaacaacat	atTTTTtctt	540
tggcggntta	attcgatttg	cacgactttt	gtggacggaa	agctcaagtc	ttctgaaaaa	600
ccagagaacc	atttgctatt	gaaattgaaa	tgaatcccaa	gaggctgcct	cccggaacag	660
ttccgaaaga	ggcagcttct	ctttttgaga	ctggtgcacg	ggattttcat	tgaattcttt	720
tgctgcaggg	ctgactcctg	tgttttcagg	aaaggtcaaa	tctcaagtat	atgggcaccg	780
agtaacagaa	atttcccca	gcttccatca	gaggtgtata	cttgaggttt	gcaatactgc	840
atgaagcgct	cctttctctg	tcaaataaat	gcttgnatct	gtttgatcaa	tatgaggggg	900
tagnagggtt	atatttgagc	aacgatctcc	agaagtattt	caggggaaaag	ttctgcttaa	960
tctgcttgaa	gagtcgctct	tgagccaacg	tttgcgatag	atttcaatga	cctcccgeta	1020
gtctgattca	agtcataact	aagaaagccg	atgaacttac	gcttaggcac	atccacatgg	1080
taatgatcct	ggagctaagc	ctgggtcttt	atccgggtgc	gcttcttaca	aatacggctt	1140
cttggtcttg	caggcgcata	tccatctctc	cctgtgcggt	tgaatcatca	tatctgtcat	1200
atactactcg	cttaaaacga	aatatgatac	caacatcaac	ggtgttgtaa	tctttccgca	1260
caggtaacaat	agggcagtat	cgtagatgat	ccgataggcc	ccgcgtattc	ctatcgtagg	1320
tgtatatggg	atttgaggtc	gatatctcct	ccaaaacgtg	ccttcttaaa	atactgtcag	1380
gctttccctg	gtgaatagcc	gtagttgtaa	attccccggg			1420

(2) INFORMATION FOR SEQ ID NO:849

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 316 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...316

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:849

```

gggtttctca agaagcacgg tggtagacat cgtagagcat caaggcattc cactgctatc    60
gtggatgtgt ccttcacctg ccacatgccg gactgtctga gatgccttac aaaccggtca    120
ttcgtggagc gcatcaggag ccggtaccgg cctgcccaca tacaggatag gcggatgcag    180
ctgtctgagc ggcgactcat cggtgactgg agtttcgata ggccggttgca ggtggggcgat    240
gaactatatt cgaagacatg ctccactaca cgacggtgaa gaacgaccat gttcacggtg    300
cacgccatcc ggacat                                     316

```

(2) INFORMATION FOR SEQ ID NO:850

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 454 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...454

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:850

```

ggcaagaatc cgtgatatag atcgctaaaa aaacactaac cccaagaact gccatcgtgg    60
tggttcttgg ggttaattgt atttggtcgt ttttcggagg ctaatgaacc ggtttgtttt    120
cggaggcaaa ccgaacattc agaatgagat ctactctcc gtgaaaacac gaatagccgg    180
tccggccgct cctactctga actgacatag aactgcgtat gccctttgcg aagatagccc    240
catgattttc aaaagccagt tgggtcaaaa tcgtaaacgg ccagatctgt ccgtgtgcgt    300
gtgcccgtac agagccaagt ccacaccggt catcgccacg ctgcaagctt gtgcggctgg    360
tgatcgaaca ggatagaagc cttagtggta tcacatgtgg cataagcttg tgcagcggag    420
cacggaatac attcgtgcta tgtcccgtcc tate                                     454

```

(2) INFORMATION FOR SEQ ID NO:851

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 573 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...573

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:851

```

nagttgctgt ggcgaataat gagggtagga tgggtgctcat caatggcaag agatttggtc      60
gctgcttatac tattattcca tcatgcgtcg caaggaaatgg gcgatttgca tcctgatgat      120
tatatcgta agacgattgt gactacgaat tgatccgcga tatagcgaag aaagagcatg      180
tgagcatggt cgattgtaca ccggtttcaa atggatagca gccgtaataa gagagaatga      240
aggtctcgcc gctatatagg aggtggagag gagagttatg gatttttgtg gggagacttt      300
attcgagaca agagttcggg atctgcttgt gcactcttct gtgaatggca gcttgggctt      360
tggtatcgagg catgagtgtc tatcgactca tcgcagcatc tatttggaat acggtcttta      420
ctacgaaaag ggacttagtg tntgcgtaaa ggcaaaccg gagcagaaga gatagaagcc      480
atgatgagaa ttatcgtgag tatgcacctg tagaactcgg agctcgctg tgcangaaaa      540
tggtactatgc ttctctcgaa ggaaaagatt cac                                     573

```

(2) INFORMATION FOR SEQ ID NO:852

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 603 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...603

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:852

```

ggaacttcgt ctctgatcg atagcggacg ttatgacagg gctttgccct agcccaacag      60
ttggtggcca aaaatccaaa gcatgccgat aataactaat gctagggctt nttctgtaca      120
nggctgaacg ctacgaagaa gctattgtcc ccttcgggtg gccgtaagcc ggcggagtga      180
tgcctatgag atgttgcgga tgcttatgcc aaagagtatt tcttctccga agctcttgct      240
gcactgaaaa acagaagggt actcttggtg agaaaaaaca ggaaacagtc tccaagatgc      300
cggaatagac cgtatgcgac gagctgtgcg cttactggac agaccgaatg ggtggagggtg      360
atagacagcg tacggacgaa taaagccgat ctctgtcggc ctacaatctc atagccgata      420
acggtcggct cgaatgggtg aaggaaacca aggggaggcg acttcttttg tcaatgggag      480
cggcgaccat ccatcatgac ggagaaagggt gaggatggag tttncagcct gcatgaagnn      540
nncggatcgg tggcaaatgg ggcaatgcga tccccctcga aaaactcatt cccgattcaa      600
tga                                     603

```

(2) INFORMATION FOR SEQ ID NO:853

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 865 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...865

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:853

caaagatacg	gtccatcgct	tggtgcatga	agaagaagat	ggccttcccg	ccttattata	60
gatgtatatg	gacatacggc	ctnatgcagg	cacacagcta	ggtatgccnc	cacgcacgan	120
cggatatagc	gaaggctctt	atagcgagac	tgcaggcttg	gtagatgccg	tttattacaa	180
gtcggacagt	actctacatt	caaagccgga	ctggaatcgg	ccgatggctt	cctgatcggg	240
tcagccaagc	cgaagcagag	tacgaaaacg	gacttctctt	cctgcccggc	tggacaaaag	300
acagaagacg	gggttcttta	tcgaccagcg	agagaacagg	gcctgctgga	ggagtatgcc	360
tccggacgta	aggtgctcaa	tatgttctgc	taagcggtag	tttctccctg	tatgcaatga	420
gaggaggagc	atacaaggta	cctcggtgga	tagctcggcc	agagccgtgc	atctgttgga	480
gaaaaaatatg	cactgaattt	tgccggagac	gatcgtcacg	aatcttatgc	cgccgatgct	540
tccatttcct	tgacgagatg	gctgtcggag	cttatgatct	gatcgtagcg	atccaccggc	600
ttttgccaaa	catcgcaaa	tgctgcgcaa	tgcgctgtag	gttaccgcaa	actgaatgcg	660
gtagcttttc	gcaagattgc	tccgggggcg	tgctcttcac	cttcaagctg	ttcgcaagcg	720
gtcagtcggg	aggaatccgt	ttggcgggtct	ttaccgcagc	agcatcggcc	ggcagaaaag	780
tgcgaatact	gcatcagctt	acccaacctg	gccgatcacc	ccatcaacat	ctacatccgg	840
aaggcgaata	cctggaaggg	cttgg				865

(2) INFORMATION FOR SEQ ID NO:854

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 450 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...450

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:854

ggtcgatggg	gtcttcagta	tggaggggta	tgtctgcaat	ctgcccgaat	cgttcgcttc	60
gccaaagcga	acaacgcca	tgtgatggg	gacgaagcca	cggtatcggc	gtgatggggc	120
accacgggac	cggcgctctg	aatcactcgg	tctgaccgac	gaagtggact	tgatcatggg	180
tactttcagc	aaatcttcgc	ttcgctcgga	gggtttattg	caggagacaa	gagcgttatc	240

aactactgcg ccaccacgcc cgatcctata ttttcagtgc cagctgtacg ccggctctac	300
ggcagcggga gcagctgctc tggacattat gtttagcgaa ccgancgttt agcccgattg	360
tgggagctga cgcactactc attgaacgca ttcgcagtct tggattcnaa ataggtcata	420
catcgacacc tattatcccg cttttatccg	450

(2) INFORMATION FOR SEQ ID NO:855

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 330 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...330

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:855

acttcatcgc cgtagcatag gactcctttc cctcttcttc gccactttta tcttggcgaa	60
gacgaaagga tcgtaggcat agcgaaaggc ctgggtgaca tcacatgat gatggccagc	120
ttgtagcacg cgccatagat accgagcgtg ctttcccttc cgccggatcg tcgaaaagca	180
tgggaaagag aatctttcgg cctgattggt gaagctgccg gccaaagcca acagcagaat	240
agggagaagt aagccagcat cttgcgcana acgtccggac gaaatacgcg gccgcatgcc	300
gccaatgagg aaaaagcatg accatctgca	330

(2) INFORMATION FOR SEQ ID NO:856

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 517 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...517

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:856

gccggtggaa gcacagatga cagcaggaag atgtctactg gggttctaata tggcctgtct	60
ggagatgatc aagagcggta cgactgcttt cctcgacagt acgctcatac ccttgccaca	120

```

gcacgagcag tagaagagat gggcttggtg ccgtaactatc atccacgctc ttcgacagag      180
gagatcagga gggggccgca tcgacagaga acgttgctac agtctgcaag aagcattctg      240
ctccttagcg acaggatcca attttcggtg ggacctcatg ccatttatac cgtagcggag      300
agcaattgca attctgtcat cgcttcgcga atgagaaaaa tgtctgatac acttgcacct      360
atcggagaca gaaggagaag tccgggactg cacgctaagt tcgggtaccac tcctgtcagg      420
tatctgcaca actgggcata catcgcccaa ctaatcttgg cttaatagca tctggcttgg      480
atgatgaggg atggacttgc tggcagctca tggctgtg      517

```

(2) INFORMATION FOR SEQ ID NO:857

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 307 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...307

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:857

```

cggaagctgc ggtcagtgtc gttgccgtgt agtggaagga ggtggcgaat ccttccgacg      60
gagaagggat ttttctctcg caaagaacaa aaggatcatg gcgactttca tgtcagacaa      120
aagtaaagga ggatcttagc atcgttatcc cgaagaggta ttcggtgtga aagaatggga      180
gtgtgaagtt ctctccataa gaatgtctcc actttcatca aagaatttgt ggtgaagctg      240
cccgaaggcg gactatgaac ttcaagagcg gtagctatgc ccagatcaag atacgaatcc      300
accatcc      307

```

(2) INFORMATION FOR SEQ ID NO:858

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 500 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...500

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:858

gcgtgcgc	cat	tcctctcgtg	gattgggggc	gcggacgcgg	tcggatacgt	tggccgagag	60
caaccgccg	ctcgaagagc	atcgactgcg	acaggaagag	agcgttggca	ccggcagata		120
ttcctgctg	tgagaaaaca	caacaacaac	ttcgatcct	cgaattggca	cgctgtaccg		180
acagtatcg	tcaggccgct	atcatactgc	cgtggaaacc	ttcacccgtc	gggctatttc		240
caccccgatc	tgaatgcggc	acaggatgcc	aaggacctgg	cgcgtacctc	gctctcagag		300
cattgcatca	ctattggagc	tactactaca	atctgcgtag	cctacggcta	tgatcccggg		360
acgcgatgag	gaagatcgat	atacccatgg	gagaactata	gggacaaagg	aatcggacga		420
tcatagcaat	gggaggaaac	cactgatacc	cgattgacct	gaaaggggat	atgctggcaa		480
accggagaat	cttctatttt						500

(2) INFORMATION FOR SEQ ID NO:859

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 423 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...423

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:859

gatgcaggcg	aaactagcca	agcgtgttca	ctttcaaagc	agtgtacttc	tcccgccecca	60
aaaatccccg	gattgaaaaa	ctttcgcccc	tatgccgctc	attgggttcg	agtcttcgtc	120
ccgatgtcgt	tctctgtagc	gaattcatct	gctgacactg	accctcactg	ctgcctctcg	180
cctgttcagt	ccgaaaccac	gctgtatgtc	ttatgcgatg	acaatgaaca	aatggcagaa	240
gcagactgca	ctacgggtcg	ggcctcaaac	atcggatgct	ctcctatgtg	gaagcggtat	300
tctatgtgat	agccgtgcct	gtgatctcta	tgcctctcgc	ttcctacgct	ggatagggan	360
cgattccggt	tacctcccca	tccgtacagg	anaaaagntg	ctgcgcccc	tctatgaaca	420
gtc						423

(2) INFORMATION FOR SEQ ID NO:860

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 347 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...347

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:860

```

ggacgaaaaa gggaatgtca agaatatcaa gcaggccatg atggccgata catcggtaca      60
agcctcggtg ccatactggg cacctccacg gtaactacta tgtggagagc ggatcgggca      120
ttgccgaagg aggacgaacg ggtttgaggc attggttacg ggcagctttt tcctggtggc      180
tctttttctg tcgccctggt tctccttggt ccagggtgcag ctacnacagg tgctcttgta      240
atgggtgggt atttatgctc ggatccattt cgatgatcga tttgtccgac ctgtcgagac      300
ttttcccgct ttcatacacac tgctgacaat ggtactcacc tacctat                    347

```

(2) INFORMATION FOR SEQ ID NO:861

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 337 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...337

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:861

```

atcacaaaca atgaacaann acaatcnagt ttctttgcct tgccgccggcg taatcggcgc      60
attgatgctg accggctgca atggcaataa gggtcnggct aacgatactg acaggaagcg      120
cgaaccggta ccggccatcg acctcaggcc atggatacat ccgtacgccc gctggacgac      180
ttttatcgct actgcacggc aattggatga aaaacaatcc tctcanacct gcttatagtc      240
gctacgntca ttcgacatcc tgcacgacag caccctcgan cgtgtacacc tgatgtggac      300
naccttgtag caggacagca tgaagtcggc actaatg                    337

```

(2) INFORMATION FOR SEQ ID NO:862

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 486 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...486

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:862

```

gctaagctca tcattctctc gtttgccccc atgaaaagca gaatttctgt agaaacgcat      60
tgcatacaag ggcaatgaga gcagctaaaa tcacagagtg atcactgaga cggaagctac      120
ctgaccagcc ttgacaattt gcttcgcccc aataagcgag atatatacac tccgccccca      180
acaccaaaaca tcagcctatc ccaagaaaca ccaacgataa agggaaaaca actgatncgg      240
cagcgcagga agagttccca aacgtgcaac ccagaaagta tctaccacat tgtaattgcc      300
ataatcagca ttgcgatgac aataggtatc cccaactttg tcaggatttc atcatacttc      360
cttcttgcaa aatattacag cgttgttcat cctataatct gtatcttctt aagtaaataa      420
attctgctgc aaaggtacag gggatacagg gtcgtcacia tagacaaaca acggtgataa      480
tagcac                                           486

```

(2) INFORMATION FOR SEQ ID NO:863

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 962 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...962

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:863

```

cggcatatga aatgtgaagc aatacggtgt gcaaggcaca gaagtcaata gttcgtcgaa      60
naggagattt ggttcgatag aaccgattcg gtatcgctga taccttccac ttgggtccaga      120
gcacgcaaag agatcgaagg atgtctcccc gtactgcgcc gaagtcacct atattgactc      180
cccgtaaagta cgatctcttc ctccctctgc ggctacggcc tcagcctgtc ggacgagaga      240
ctctacgacc cgtttcggct gcgtccgcga gctttgggta tcgtgcagta agagagtggg      300
agtcgcatcc gtctgcact ttgaggaaat ggcggtgtgcg gtctccgccg aacagccggg      360
ttgaaaattt cgaatatcct ttgtgggggt cggagaatag tctgctcggc aaagccctgt      420
atcggctctt ggctgagaat attacgaggt cgagcttctc atcggctccc agtacgatgt      480
ctactccgtc attcgagcta tttcctccgg tttgagctgg gcatagcagc cggtgacgac      540
atcaacgcac cgggatgctc tttatgtaac ttgcggatgg cattgcggat ttcttatcgg      600
ccagctccgt tacggagcat gtattgatca cgcataatcg gccttttcgc cctctcgcac      660
agggcgcaaa ccctgctcgg cgagagtttt ccgatggctg aagtctctgc gaaattcagt      720
ttgcagccaa gagtcgaaa gccgcttttt tgttttcaaa gatgaaagca tctgtcatac      780
cgcgaaaatt actgcttttt gagactgtgg gacagatat tcagggcaac tcaagggcaa      840
tcgcatttga actgtcaaca cacttataaa cctaactaac gatgctacac tcggttatca      900
aacaagtacg aattaatggg acctttgcac acaagcaggc nccttttggg tattcttctt      960
at                                           962

```

(2) INFORMATION FOR SEQ ID NO:864

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 431 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...431

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:864

ggacgatccc	tcctccctgt	gnaattgaga	aaccgtacac	ggctaccgag	gtgatattat	60
ttgtactcat	tgttctaaat	aagtgggtatt	cataatttta	ctccacaaaa	atacaaaaga	120
acgagcgggtg	tatcaaagg	ataaaaaaag	gtgtgcaaaa	atcgccctaat	tgcgatttcg	180
acacaccctc	tttccaaatc	gatttaatta	ttgtctttcg	ctaaccgtcg	aatcagctca	240
gtttgggatg	attagaccgg	aacgaagttt	cggctogaac	caagtagtct	tgggagcatg	300
atattgcccg	aatcagcaat	gtccatccag	ctgtttccat	cgaaccggat	aaagagcgag	360
agcaacacgc	atttcgccac	tgtctacacg	ctttcagttc	tccccagtcc	gcgaatacca	420
ccccacaaat	t					431

(2) INFORMATION FOR SEQ ID NO:865

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 514 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...514

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:865

ctctgtaccg	ggcataatat	cgtggatcat	accnccgcaa	cgcagttctc	tacaaagttc	60
atttgtttgt	cgtatgtgta	ttattggaaa	tgcattccgag	cctacagcca	tgcggttgcg	120
gctccttgat	gagcaaagg	aagcatatgc	acatattgct	gttcctaaac	taaacgagga	180
tgtcgcaaac	cttattcctt	aactataacg	tcagttccnn	ttccagaccc	aactccccta	240
tttgccttag	atcgaactga	cattaaatac	gagtatagtc	cattattatc	agtactcagg	300
tgcaaagaaa	gcctaccgaa	agccggctnt	agagagttat	tcataataca	gtaagcagtg	360
cttcggagag	aggtttcgat	cggtcggtat	agttatgccg	actgctaaga	gcccggtgac	420
ttaatgccac	gcaatcggcg	tttcgcccta	agacaaccaa	tacctgagac	accgggcaac	480
ctgctaatac	gtgcctgaat	ctgtactcgg	aagt			514

(2) INFORMATION FOR SEQ ID NO:866

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 541 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...541

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:866

```

tcagcatgaa ggccttttctt ggaacaacgc gcaatgccgt agaggtgcaa tatggacggc      60
tcttattaca atgcttttga tggctctatct caagagtacg ccaaatatcg gtggtgcttg      120
tctaattcttg tctcttgcgt aagaatcaca catttaccaa gatggatctg atgcaatggc      180
ttaatgagcc gtttacccctc cgccagagcc cgaaaatcag ctcttttagc acataggggg      240
atgacacatt tcgaaaaaatt gatagtcagg gggctaatacc gctccaggac taagatccct      300
atgcctcaag aagaaacttt taggacacta atggccggca gtactttttt cgccgatggg      360
tatcttttcga tagggcgaaa aacgttaatt ttcgactgtc aagatcgtga cannaccaac      420
cggaccttcc aaccttaact acaaacaaat cagaaacgat ggatttttta gacaaagtat      480
tacaagattt agccttatcg acctgaaaga gatcataggc tccttcgtga ttctattcgg      541
g

```

(2) INFORMATION FOR SEQ ID NO:867

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 708 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...708

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:867

```

gcgaaatttt ttcaaggcca gactcgggag cgttgttttc cagcaccttc aacgtagagc      60
cgactgctta atcttatttt aaaacaggaa cagaaatagt cgaaaaaatc gatccttctg      120

```

ctttgctggt	cgctgtgctt	cattttctcta	cgaaggctgt	gacccccgtc	agaaatgtgc	180
gcaatagcca	agtgaagca	aagcaaagac	cgaacgtaca	aagccctcgg	actctgtacg	240
gtacatagca	acatgattgc	agatcggctg	gagttccgca	acaagatttc	ttccaaaaag	300
aggtaagaaa	agccgaatat	gaaaatcggc	tggcgtgga	agcctcaatt	accctgccat	360
agatttatat	ggtgaagatt	cttgagcgca	gttgtaaacc	ctttcgtggg	tgcaggaacc	420
gatgtcgaaa	ttccgaactc	catgacattg	attgctcttc	gttcgtgatg	cccgtcgaag	480
ataagcaggt	acctctcaat	ttggctaccg	tcggcgcttc	ggacggatgc	actatggtat	540
gatctttcag	tgaatcgtgg	cgatacgata	cgagcagcct	ttgacgggaa	gttcgtgtac	600
gcagctatga	agcgcggtgg	tatggctact	acatagtttg	cgccatccga	acggactgga	660
gactgtgtac	cgacacatga	gtcgccattg	gtagacgaga	atcagatc		708

(2) INFORMATION FOR SEQ ID NO:868

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1612 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1612

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:868

tatcaaagac	ccntcccca	ccgtggtntt	gaaggaattg	gccgacagcc	tgtgagggtg	60
atggcacgtg	cggtgtgctc	gacggacgac	ctgtggaagt	ttactgggat	ataaacgaac	120
gaatctatag	cgaattcaat	cgtcagggtat	agcattcccg	ttcccgacgc	ttacgatata	180
cggatccgcc	gccgggagga	gcgaagaggg	aaaagtacgg	aagctcaatc	gccggagaac	240
gtctcaccaa	tacctccctg	taagagttga	agatcttgga	tttggacacg	aatcgagata	300
acatccctgc	tcgtctatga	cgggcagggt	ccaagccttg	gtgcgtcgaa	gattcgcatg	360
atgggtctcca	tggacatcgt	attgactatt	ttgccggagg	agaaaccatg	aagcggctga	420
ccttgaatct	ctcatcacgc	tcggccggaa	catgatattg	cggatattgt	ccagcaatac	480
cagccccatc	gcaggttggt	ctcgtccagg	acgggggaaga	cattgcgatg	gctgatacca	540
acacgtgtac	gacatctccc	agagtcatat	cgggtctcac	cggttcgaat	ccttttctat	600
caccgcattc	aacgtcataa	gcgtcagcac	ggccttgctt	tctgatgcgt	cagcagcttt	660
cctttctgtg	ccaaacggag	cgaataatgc	tgtgcggcat	gaaaaggcgg	atagtggcgt	720
acgaactcgt	actcagagca	tgagcgggaag	gaaaagantg	gattccgccg	gtcagntcgg	780
cgataggaaa	atacctgtca	gcggcgctg	catgaccgcg	gccatcactc	cggcatgccg	840
aggagagcaa	agtttttctg	tggcagatag	acctcgatga	aggaaaagaag	ttcagcgcat	900
aggcaaagat	gaatccgctc	agtcccccca	taacagactg	ggcgcgaaaa	gtccgccgca	960
gcctccgccc	gaattggtgg	tacggaagcg	aacaccttcg	tgatgatgat	aaatccgagg	1020
aaaacgaacg	cacccaatag	gaattggaat	acggctcgaa	caggctgcca	tccatcaaga	1080
gctgtactgg	cgcgcgagca	gggcgttgat	cgtatcgtag	ccctcacgta	tagcggaggg	1140
aaaaggaaga	tcagaccgca	gaggataaag	gccgattgag	gtagcgttgg	cgatagtgtg	1200
gaaagttctt	gagtttgctc	tcgaaacgaa	catgaccttg	gagaagtaga	aagataccag	1260
tccgcagaat	acaccagtag	cagagcatag	gggatgcgat	ccatcgaaaa	aggnnncngnt	1320
gaaccttaaa	nttnaacatg	gttccttgcc	ccgtgataat	ataggatacg	gcgcggcact	1380
gaccgagctg	atcagcagcn	gcagcacgga	cgacatggtc	aatccagcag	gaggacttcg	1440
atgacnaata	ccaaccccg	gatcggagcc	tgaagatccc	cgaaatggca	cctgcggccc	1500
cacaccnacc	gaggagcata	ncgtcttctg	ctccatgcgg	anancngcn	cnaggttgga	1560
gccgatggan	cccccgtnag	tacgataggg	ggattcgggt	ccgaccgatc	cg	1612

(2) INFORMATION FOR SEQ ID NO:869

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 664 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...664
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:869

```

gtcattggta attgtgccag atagtattcg cggttgagcg gattggaagt gcggaatcgg      60
cagctgccgc ctgtagctcc tcttcgggtca tcaaagttcg ggttgcgctct catcagtctc      120
ttctgcagta gaagaatcgt cagtaggatg tcgaaattgg cctgtttgcg tctacgtctc      180
caatcatctt ccagcaacgc tttccccatt tgcgttcgaa agcggctttg ccctgcgcta      240
tcagtgagga ttatagaaat agaattcacc agaagctcct cccatttgca ttccggcggt      300
ggattttgag tctttccgcc ggcagagggg gcgaatcctt cacctccgca ttgaaaagct      360
cttggtctctg ctggagtttt gccatctcct cccttcgagt cgtttcttct ctgctatggc      420
ataggcattg ataacgctgt cataatggcc agtcgctggt cttccggcat ggcagcaaga      480
gcaagaaggc gtcctgctcg tgcacgacct tggcatgacc gaccaattca tcgagccgga      540
ggaaagtctg gctacgcgt tgtagtcggg attgagctctg ttcagtacct gcttgcgga      600
gagaagcagg ctgagctttc aggtactgct tcctttgtat agatgtcgcc aaacgaatct      660
gcag

```

(2) INFORMATION FOR SEQ ID NO:870

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 365 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...365
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:870

gaccaaagcg gactttacca atctgcgtag atactctttc gcagcttctc gcccgacaac	60
gaggagatcg atatatgtgt ctacaaagaa gtgggcaata tctgagtgcc atggggaatga	120
aggagacgct gaacaatccc gatgtaacgt cgattgttat tatctgttcg acaacaacaa	180
gctctttacc tcattcatag ttccgccccct cataattctt ggcagtattc tccgcgtgac	240
aagagatgat atcgatcccc attatgccgg ccggcacaca ggagatcaat gctctatgta	300
atccagctcg gcgtacggct gatcaatgcc aggaacaato tccaattttc tggcaatgcc	360
gagtc	365

(2) INFORMATION FOR SEQ ID NO:871

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 672 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...672

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:871

tcgagttgtc gaagcattcg atatgtttcg gcggacgata caagtgcaat ccttttggat	60
cccgtagcag atattgtagg cgcgttgctc gggattgact tctcggcacg tttgagtttg	120
tcgagcttgt attgagctac gttcttccgg ataattccag cagtttccgt ttgtctccac	180
gtcgggggat cgtagtgtga tgctctctcc cgtttgccaa ccggtgtcga acggcaaac	240
gatttgtagc cgttgctttc gaatctttgt ctacagctctg ttatcgccgc tgcagaagtt	300
cttcttttga ttctctata tgctttctgt actccaaggt gtaacacgat tgatccctcc	360
gtgctctatg tgcatgtagt tgatataggc cgggtgctcg ctctgctgta agagaaaaca	420
tctacgttgt ctatattacg cgtacgaccg tgtgcttggc ttcgatatcg tcaagaagct	480
ctattctctc ttgcatactt gtgcctcttc gaagcgcagt ccttcgctgt atacctgcac	540
ctgtcgcgat acatgcgtac aagcctgtgc aagttgcctc ggagcagacg cgtatttccg	600
atacattgct ttcgactnn ttccaagttt gattgccatg caggggcctt tgcatttctt	660
gatgtgatac tg	672

(2) INFORMATION FOR SEQ ID NO:872

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 626 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...626

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:872

```

cttcgacatc cgatgagacg tcaaactttt tccctttcat tttctgatcg ttatagttaa      60
tatcccaaca aaggattgat cgacaaatac ttatgagatc ggcaccataa cgcttatatc      120
gaactcactt tataagaata acgcgaacaa gggggaggaa agcaaattggc cgattatcct      180
ttgctgtgtc cgactgggat gaaaagagaa aaggaaagga agatgaaggg aaacagaagg      240
gaggaaggaa ggaaaaggag aaagcatata gaggaataga gagaaaagca aaatatTTTT      300
ggagagagag aaaataaaaa aggagagagc ctccgattcg agatctctcc ttacaccttt      360
tttccgggga ggagggtgga gatcctatcc cccctctctc tcacgcttct taaaaaacgg      420
cggcgtccta ctctccact ggacgcagta ccacggcac cgttgggctt aacttctctg      480
ttcgggaatgg aagagggtgga tccccaacgt tataaccacc tgaatacttc gaaaaggcat      540
cgacatatcg aaaggccaac aaataattcc tcaagctttg cggcaacaac caacctatac      600
cgcacccctn gggatgcaca aaagtt

```

(2) INFORMATION FOR SEQ ID NO:873

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1005 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1005

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:873

```

gtggagccga tacaggaagc cagcgaatac accgaggatc cggtttcgcg gaggaggtag      60
agaagaaaat gatttccctt gcattggaac gccacggcga aggcgcaagc agacagccga      120
ggaactgaag atttcggagc ggacacttac cgtaaaatca aggagtatgg actggaatag      180
aaccctcggg cgatacgctt ttccgctctt gcggcggtgc ttatcgctct gctgacctgc      240
tcggctgcag catctcctac agcttcaacg gaggtgctct ggactatagc cgcacaaaac      300
gctttatatg ccgcatgtga ccaatcaggc caccgcgta tatccccgtt ggcgcagact      360
atgaccgaag ccttccaaaa ccattttacg cgcgtaccaa gctcgaaatg gcacgaacca      420
acgatgccga catgatcatc gggtggtcat caactaattac gacttcgctc cctcgcggt      480
acaggacaac atctggccgc acgcaccaag gtaaccttat ccatacaggt gcactacgaa      540
acaaggccct ccccgaccag aacttcgacg gggaccttta cgtcttcccc gacttcgaca      600
gcagcgagca gctgggtggc gtacaagacg ccctgctgcc aatatggctg acgacttggt      660
gaagcaggtg tataacgcta cggtaggaac tggtaatcct cccccaccat gacgactaac      720
gatctgtacg cctactggag caccctctgc ggctttcggc tgacacgctg ccgagatgaa      780
agcctgtacg aggcctatcc ctactgctcc accttcgtct tcctatacct ataaatatgt      840
atgtggtgca ggacgtgcgc tatgcttcgg agctgcgcgc gcggcaccct atctgccgga      900
caggcgcaag ctgtacctgc tcgtggagca aatacgcac cggagcagct gcaacccgcc      960
tcggccgaaa aggagccgga gccttctcgc tcacgatga ctccc

```

(2) INFORMATION FOR SEQ ID NO:874

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 538 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...538

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:874

cctctttctt	tgttttatgg	agtggtttg	gttatagagc	tgtacgactc	gaagaccata	60
gtatcctctc	gtatgggttc	attctttgta	tctcagagct	gttgacacaat	aacctccac	120
ctcctcatat	cgatcaagac	agacacagca	ttgatttgac	gaagaaagga	gagcttcatg	180
cgatctctct	gcaaactcaa	gtaatttcta	tttgtttggt	gcccttatgc	atgaggtttg	240
atcttctctga	aaaacactta	agaatcagct	ctgcggcaaa	agactttaat	gaaatcctat	300
aaaatagttg	caaatagctg	atagtttagcg	cattgatggg	agcgaatcag	ctgacaatcg	360
cgctctgcat	cgggtgcagga	agcaagaatc	agcgacaatc	gcgtcctgca	tcgtgcagga	420
agcaagaatc	aactgacaat	tcgccctgca	tcgtgcagga	agcaagaatc	aattgacaat	480
cgcgtcctgc	tcgtgcagga	agcaagaatc	agctgacaat	cgcgtcctgc	atcgtgca	538

(2) INFORMATION FOR SEQ ID NO:875

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 394 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...394

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:875

ccctacaccc	ggcaatgtgg	caaattgggc	tatcgccctc	tcaagcagag	cgaagaatat	60
ttctgtatca	ttcatccaaa	atatccagct	cgttgccgcg	tagtcgtaaa	atgtgtagtc	120
caggaatccc	agactctcat	cggggatagt	ttgatccctt	tggcatactt	gagtttccat	180
ttcttcaaga	tagaagaagg	aaacctttct	tgaggatgc	tgccacgtat	ggatgtacgt	240
gaagacgaat	tgtttgactt	ggtgctccgt	gaccattttg	gccacttttt	cttcaactga	300

tccgtgaaga gtatggagga ttctaccttg ccggtaccca aactgtggga caacactctt 360
 cggtatggat gaccatcgcc ggacgaacac gcga 394

(2) INFORMATION FOR SEQ ID NO:876

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 596 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...596

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:876

gaggaagaac caatccctct cggaaaacct acactcaacg aactgatggc aaccactgg 60
 aaggaggaag cgaatacatc gaactataca accctacgac aaacctgtcg ttccctctaa 120
 attcgccata ggcatactcc gcaatggagc tacaccacca caactgcact gccgactgta 180
 gccgatacac tctatcggga caatacatcg tctttgcaa gaagagtga ggagtcactg 240
 acttcacccc caagcgcaaa atgttgtcac gatgagcaac ctgcctcagc tggcaataag 300
 ggatttacga tcggactgtt cgaagaaggc cttgatcaac ctctgaagaa gtggtctatt 360
 cacctaaaat gctcggagaa ggaaaatgta acagacgagg gggatatcact ggagccgtat 420
 ctccctcgag actccggatt cgattccgac caactgggca ggcggactcc atcggcaggg 480
 atatgctact cggctacctn aactnccaat cctcaatgca gatactccca gtagggctac 540
 caataacgaa acagaagcaa cggaaaagct acctgncacg gcagtatacc gaagaa 596

(2) INFORMATION FOR SEQ ID NO:877

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1505 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1505

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:877

ccgttaactt	nttcnggaag	ggacgcacct	tggaagcggt	ctttggagtt	gatattgagt	60
gcagcccttt	tctccggcac	tgtctccgc	agcgttttat	gtgctgatgc	ccctccaaca	120
cctccactgt	tttcaccgcc	tcttgagcat	gttccgggag	gccagattgt	agcggttttg	180
cagcatgtct	acgcctcgat	atacatatgt	gtgataggtt	cgccctgata	tttgacgagg	240
ccgttgccga	gacctctatt	cccggcaatt	tgcgcagcag	atcggccaga	taccatcgtc	300
cggccccacg	aaagccgcag	ccgaataggc	aatcgatatct	cccgcttgcg	taccggttcg	360
gcgcgtacca	ccacttcctt	gagcttgacg	tcgacggcac	caaagcgaaa	agcagcggag	420
gagcagccgc	atcgatggct	tgctcatctt	cctatacccc	atatacttta	cgctaaggag	480
ttttccgcgc	cttttttctc	cagagagaac	gagccgtcgg	ctttcgagag	gacgaaggca	540
gcggtttgcc	ggaggcatcc	atgagttggc	acactgcccc	ggcaagagct	cctggctctc	600
ggcatctatc	acacgaccgg	caagcatttg	tccggtcctt	cctgagcaac	gacaggcaac	660
agccccgcca	cgcacagcca	caaataagcca	aaatcgaagt	gacagcccta	ttcatcatgc	720
tttattcctc	ctccatggat	taaacggctg	aggtggcaga	tgagaaaagt	ctaccggtat	780
cgggaattga	caaaagccgg	cgaattggcc	acgacttcgg	cataatgctc	gtgatattac	840
gaatcgtttt	gcgcattctt	tcacgcgagc	cgactttcgt	aaggcatttt	tcttgagata	900
aatcggagac	ggaaatgtaa	tctcctgcat	tcgttcaatt	cgaatacgta	ctctccgtca	960
tccgaaccga	tagcgacgat	aggccgggca	atccccgaaa	aatgtacggc	ccatccgaga	1020
gggcaatata	tcggcatacc	aagcagtatt	aatcccgtcc	gctgtggtgg	caggtggctt	1080
tcggcaagtg	tattccatga	tctccttggt	ctcttccccg	atctgccatc	gaaagacggc	1140
cacggacaac	cgtattcata	agaaccgact	atcggactcc	gtattgatga	taatcttgtc	1200
ccgatggata	gcctttaagt	acgggggtccg	ccattgggtc	ttcttgacgt	aatcataagc	1260
tttcgaaaag	atctcatagc	agtccctttc	ttccgagcta	cggcatcatt	caccgagtc	1320
gctcatactc	gtaaaagtct	ttgaagcaac	tccctcgctg	ccctatttcc	aaacacactg	1380
tgettgggtt	tctttgtctc	gectcggtgt	atctttcaca	aagagacttt	gtaaaaaaaa	1440
tcgccgttgg	gtatagtctt	ccaccctctt	gggcacagta	tctaccggca	tcccttctgc	1500
gccca						1505

(2) INFORMATION FOR SEQ ID NO:878

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 377 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...377

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:878

gctgtgtcta	ngtttggggn	acccgatac	agctttctct	atttctgcc	aagatcaatt	60
atcgtcacgt	tggtttggtc	tatcagggat	ttataaaaca	aggactctac	cccacggtat	120
cgaaaacttt	agagactttc	caatcttgga	gacgtttaag	ctcgccatct	tggattagga	180
aaaatggttg	caatgactga	cattgaatga	caaagctgct	ttcccttcgc	tatcgttcac	240
tgtgaccaag	ggagtgtacg	cgttgcattc	tgccagaaat	acaagtcctt	gtcgcagaaa	300
tctcatatat	ctgaaatcca	ttgttgcaat	gtcgttgata	caggctcgct	gttcttttac	360
caaagaaggt	gaccatt					377

(2) INFORMATION FOR SEQ ID NO:879

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 887 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...887

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:879

```

ggaactcacc atcgacgaga ttgtggaggt gaacgggtgag aagtggatat tgcgaaaagg      60
cacaagacac aggtgccgta ccaagtgaaa ctgctcgagt acccttgcaa atcatcgaca      120
gataccgacc gttccaaaag gacaactcat attcggggac atcaactact ggacgggtctg      180
caagaagctc aaaaaatcat cagcgagtgc ggaataacaa aagacatctc cttccattgc      240
gcaagcacgg ctttgcgaca ttggcactca gtaagggcat gccgattgag agcggagccc      300
gtgtactcgg acacacgaac atcgtaacca cgcaactcta tgcaagataa ccaccgagaa      360
actcgacacc gacctctcca tgctcggcag cagctcaacg cctcatttgg ctatatcaaa      420
atggcatgac aatgaaaggg aaggcataaa cagcaatgtc cgtcagataa tcacgggtgga      480
cgaacatggg acatcacctg acccaatgaa gaaatatgga tgagcgagta tgagattgcg      540
acctgctggg cgtattcgga cataccatcc gcacgcaggt caagaagaat acaggggatgg      600
actgctgcac tcctgcacgg cagagaggaa catcaggtgg cggaggggtcg ctggcttgat      660
gtgtacagcc ttgaaatggg catagccttg cgttcgcgat caggtcgcaa agggcaaaaa      720
ggcttcgaaa gcatgcatcg caatgctgac cgaacgacac ggaggcttta tcatgttcct      780
cccacagaag caggttgttc ctgctaaaac aagcctgaca gggtttatag aggttggtccc      840
cattgacaca agggggataaa ccttttttct tttttgggtg ctggaga                      887

```

(2) INFORMATION FOR SEQ ID NO:880

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 491 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...491

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:880

```

tgcaatggac atcaagactc ttattgaatg ggtagattct ctggatgaaa tctgttggat      60

```

acgcaacggg	ctatttctat	agaaatactg	aaagagatcg	gacacgcttg	gggtttctta	120
aagatgtggg	gttggagtac	ttgacgagaa	ccgagctgca	gcataccttat	ccggaggaga	180
aagccagcgt	attcgttggc	tacgcagatc	gggagcaaac	tggttgaggt	cttgtagata	240
ttggagaacc	gagtatcggg	cttcnccnnn	nggacaatct	tcggttgatt	cattgcttca	300
ggattttgcg	gatatangca	atacagtggg	agtgggtggg	catatcagga	tatgatgctg	360
cacgcccact	atgttataga	cttaggacca	cggccggcag	acatgggtgg	gaagtgggtg	420
ttgcaggtag	tccggaagag	aggtgcaggc	taataccctg	actgccgatt	atataagtgg	480
acgaaagcgt	t					491

(2) INFORMATION FOR SEQ ID NO:881

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 385 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...385

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:881

gttacaacgt	aatcgacttc	gtagcggagg	gttgttacag	cagctccctt	gcaattatag	60
gtacaattcg	agatgcagta	ccgttttttg	ctgttgagga	attgccatga	tgcttttgcc	120
gttttttagac	catgctgctc	cacgaactaa	tctacttgac	cgccgggttc	gctgaattgc	180
ttgcttccta	tacattggac	acgacttgtc	ccataagatc	gatttcgata	cagctattga	240
tgctgccata	ttatcatttt	gagcgattac	tcgcggatca	ttgacgtaat	ctacggataa	300
agttctacat	cgggattttt	gtcgatgaaa	tgatatacgt	cttgcttcca	ttaagaaggt	360
tgcgaccatc	tttccggggg	gaaga				385

(2) INFORMATION FOR SEQ ID NO:882

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 393 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...393

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:882

gccgccgatg	cattaagagc	agaagccaag	gcttccgtac	tgattacaca	tcagcgattt	60
tgagatccgg	aagatttatt	ttcttccctt	ttactttgct	tcgaagggtta	agaagagttc	120
actcttgtcc	atggccggct	tataaggaaa	gagaatacga	gctgctgatt	gccaccattg	180
tcatagtcga	ctacacctca	ttgccaaagta	ctttttctcc	ctgaaaaaagg	aatgaaggtc	240
cccatattca	cctgtagcat	agcgcagcac	aggcttcact	gtaagttcgg	ctttttattg	300
aaccatttgg	caggaaaagc	gatactcacg	gtcacaggca	cttgcttccc	acgacttcag	360
tggttgtggc	tcagccttta	ccaaatcggc	agc			393

(2) INFORMATION FOR SEQ ID NO:883

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 643 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...643

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:883

ggagaggata	agatccgctc	ccccgatagg	gatcagggtca	gagtaaattgg	tgcacccgac	60
aggcgcagaa	aagactgtac	atcaccacct	cgctggctat	gccatggggtt	tcggcctgct	120
tcaaatacaa	attgttggtc	agagcagcga	accgatagct	gctgcaatgg	acaaaatgcc	180
ttggcctccg	acaccgccaa	aataatatct	gttttcattt	ctttatttcc	tcctacttca	240
atggtattcc	ttggcctttg	cacgtttggc	agctttggcg	tcgcgagcat	gctttggatg	300
cagacgcgac	ggggaatgat	gacggataca	ccttcatagt	tgattcctcc	cggatgatgc	360
tgcatagttc	gtcatgattc	ttgggtaccg	gcacagctcc	ctgatgtgat	cggggatcta	420
ctccgatacc	gcgacagatg	gctctacttt	gccgtatgca	gacgaatgct	gacctcggtc	480
atggagatgg	ttcattgtcc	gagataatca	ccgtaatgtg	ctattctcat	tgatggcatg	540
agaagaccgc	ttattccgaa	tgagtgaag	tagagtcgcc	gattacagca	cagccggaac	600
aagccggcat	nggcagccct	tnggcacgt	gatagatcac	cat		643

(2) INFORMATION FOR SEQ ID NO:884

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 310 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...310

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:884

```

ggggatctac tgcattacgg aatggctgct cgactgaggc gaagagggtgc tattcgacct      60
cccaantgcg ctcgaaaggg aaaatcttga ttctgatgtt cggcgcttgt ccatttgggt      120
cacttgaaan cggaatggct cgtacacgac tgtatcgccc acatggggga gttcctgctt      180
gatttccaag aagagccact tagcgtatct acctcgcccc ccnattcacc gaaagcattt      240
tccggaggtc nagatagtgt cgaacatcng agacatacgt ntntccttca anaaataact      300
gcnatcccc                                     310

```

(2) INFORMATION FOR SEQ ID NO:885

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 485 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...485

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:885

```

ggggcgggtgg ctatcgtct cctacaacct cgcggcggat tattcctggt ggaaacggga      60
gccaacgctc atcgccggtt gccccaatac cggcatacgc ccgtctgacc ttgctgccga      120
tcccccgctc gtgcgtgcgc atggcagcga atataacgcc acgactctgg agccggggca      180
tgtacatgag gatgtttttt cgactgcgaa gcacgctaca gtttcgataa ggtttgggaa      240
gtatcgtttc gatgcgcaat ctgttcgata gtgcgatgta tcttatccgt caacgacgga      300
gtacaacgct ttttccaccg ctatcccatc tcgcggtcgc gaatgcttgc cacagtcttt      360
ttccgctact gattttcttt attcgggtata gcgcganga tcgtattgag attctttctg      420
aatttcggta cgatttttct ttcggcgagt attttcgtcg acgaaattac tcgctgcagc      480
tatgc                                           485

```

(2) INFORMATION FOR SEQ ID NO:886

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 392 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...392

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:886

tctgcgtgcc	ctgacgggat	tggagcgcga	caagctgcgt	gcagagttca	agagatcatg	60
gcctccatca	atcatttggg	agctcttttg	gctgatatgg	attactgatg	gagctgggtca	120
aaagcgaact	gctggagata	aaagagaata	tggcgatact	cgcaaaagcg	agatcatata	180
tgcttcggaa	gaattcaccc	cgaagacttc	tatgccgacg	atgatatgat	catcaccctt	240
tcgcaatggg	ctacatcaag	cgtacccctc	tgagcgaatt	cagaacgcag	gctctggcgg	300
agtaagagcc	aagggatcgg	atactcgcga	aagaagattt	ccgggannta	tatctactcg	360
gcctccatgc	acgccaccat	tatgctgttc	ca			392

(2) INFORMATION FOR SEQ ID NO:887

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 559 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...559

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:887

gatcgtgtac	acagttctgc	tatgtttggtg	ttcgatgagc	aatacaggaa	aaaagtngcc	60
gaacattttt	cttcctcent	anggagcggg	acttctacta	tgtctttact	gtgaaattaa	120
aaccgggaca	gcgcgatttc	tttttcgggc	aaattttcct	ggtatgcaga	ctgccatggc	180
ttcgatcgtg	aacaaaccga	tatgaatcac	tttatgcagg	tcctcagata	tttggacctt	240
attcatatct	caaagcaacc	aatgataatg	gattccccat	gtcgagaatg	tattcaatca	300
gacggttacg	atcgggggaa	ccatcactca	gcctttacca	ttcagccgga	cggagaaaac	360
aatgtgaagt	tcagcgtgtg	ggttgcaaag	ttgatgtgaa	tatcgtggaa	ggagtggaaa	420
atctgcagaa	gattgaactt	ttaatgctaa	tgtccactat	agattggtgc	ccaaatcagt	480
cagagcctat	caagttttac	ggncccggtg	gaactaaggc	gagtaggtac	cacgaaccat	540
ggctttggct	attatgccg					559

(2) INFORMATION FOR SEQ ID NO:888

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 441 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...441

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:888

atccgtgcgcg actttgcctt tatcaaggga agtgttggcg atgaatttgg aatctcatct	60
ataaaggcac aacacagAAC ttccagcccc tgatggcatg gcagcagact gtgtagtggc	120
agaaatcgaa gaaatccacc ccacggcgag atccccatgg aacaaatcca taccagcggc	180
atattcgtgg actatacctc cgtaatcgg ctccttgcctc ttagacaaat caactactca	240
caatactcca atacgactat gacaaagaca tcaatgatcc gtcttcggat gagtcgcatg	300
atgctcatta cggaggtaac ttagtanatg gggctcgcat gctcaactct tcggagacgt	360
tgccacagaa ctccttatca tgcaagatgg tgtgaaggcc tctttgtgct tatgacaatg	420
tggaattttg ggctccggta t	441

(2) INFORMATION FOR SEQ ID NO:889

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1433 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1433

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:889

ttccgaagaa agccggcgag ggagcctact cctacattta actctttagt aagctgaatt	60
ntttnattga cataactaacc tttctctctt ctgtgattat gctgcacctt tgtgaggatt	120
gtactataag atgagggatg gggaggaact gcttttgttc ttcttattac tcttgcttca	180
gatcgtcttc ggcagaaaat tgtccaaatc atccgaatcg gtactttgat tatcagtcac	240
ctgatctcat cggcaaatte ggcactcagg actccgagta catagtctat ggtgagtctt	300
ccaaatccgt ctctttgatc agatcttctc tgttcttgct gagacgctct tggccgtatt	360
gcaaccgata ttcttgaaca ggtcgatgat ccctggtcga tctcgtcgtt gaattcgtcc	420
agatagatgt cttcttcgtc ctatcgtcta tgtcacggaa cacttcgatc tgataaccgc	480
tcagccccga gccagcttga tattcgaggc attctttccg atggccaaag gcacttcttg	540
ggcgcgagga atacttcggc cttatgctct gcttcgagca ggcaatcaa gatatacgtg	600
cagggctgag tgcccgtggt atgaagaggg cgggtgtgtc gtgtactgcg taacgtcgat	660
attctcgcct ctcagttcgc gcacgaacct cgtatgcgcg aaccgttcat acccacacag	720

gctcctacgg	ggtcgtacga	tcgtcgtaag	actctacggc	catcttgccc	ctctctcccg	780
ggatcgggct	acgcagcgga	tggtgatcag	gccatcggca	atctccggta	catcagctcg	840
aaaagcctct	tgaggaactc	tccgcttgta	cgcgatacga	tgtcttgggg	ttgttggttg	900
cgttctccac	gcgctccaca	acggcgtgaa	cgtctcacct	ttgcggaaaa	agtcgcttgg	960
gatctgctcg	ctcttcggca	caggagttcg	ttgccgtcgt	cgtcgataag	cagagcctca	1020
cgcttccatc	ctgatatact	tcagccgaaa	tgagctgccc	gatacgttcc	gtgaatgttt	1080
gaacagggtt	tccttctgaa	gctccataat	cttgctggag	agagcttgcg	aagattgaga	1140
atggcacggc	gaccgaatga	agcgaagttc	acggagccgt	tacttctcca	ccgacctccg	1200
cctcggggtc	gatctcgtga	gcacgacag	agacacttcg	cgactttcgt	cctctacggc	1260
accgtcctct	actactgacg	ggtgcgccat	atttcgaagt	cgcctttctc	cggattgatg	1320
attcgctgaa	gttgctgtcc	gatccgaaga	tttttgccag	aacgttccgg	aagaatcctc	1380
caggacgttg	atcatcgtct	ctttgtcaat	gtttttcagc	ttttgaattc	tgc	1433

(2) INFORMATION FOR SEQ ID NO:890

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 721 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...721

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:890

tgccgtcaag	caatggggca	taaaagaaat	aacaggagat	atcatcgtca	tgcatcagct	60
tttgacattg	agggagtcaa	tgacagttgg	ctcgatgaga	caaaggcaac	tatttcgggtg	120
ccggcgtcta	tggatttaac	atcaatgtaa	tagaatagat	gtcatccttg	ctacaggcaa	180
agcaggctcc	gaagctatat	cctgagaata	gagcctcctc	atccggagggt	tcgggtgggaa	240
aacagatoga	ggtaatccac	cgaggaaaag	atactgccgg	atgctatggc	gaagggttgg	300
tcttaagcga	acccttacgg	gagtccttcc	gacaaatata	gttcctaccg	cctcaagacg	360
gatttgcccg	atcctgctct	atacggagct	gctgggccaa	aggcttattg	tctgctgccg	420
gcactctgtg	ccaagggaag	tccgtgcctc	atatcaagcc	gtaccgatca	ctcaagaatt	480
attaatctac	aatcccttcc	attggattca	ttgggtgcgg	tgatgaattt	ccgtagtcta	540
atcattttgc	agaggctttt	gtcaaacagt	tggtctccct	tgcatogaga	atcatcgggg	600
taatacaaca	gagcgtggtc	tgtccgtcat	ccgaaacatt	ggacttccca	aacaggattg	660
cagcataccg	acatttctct	ttcggaggat	ccggtctttc	ccgtaaaaat	cgttttagcc	720
c						721

(2) INFORMATION FOR SEQ ID NO:891

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1024 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1024

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:891

```

gacaaggaca cgaagcgctt ctggttgttg ccaagagggc cgaagccaat cgggacttgt      60
gcaagcaatt ctattataag acgacggcat cgttcctacg tgcactggta tggggacggt      120
tcgactaccc gatcgggaac cattaccgca atataggacg cgacctgaaa gaccgcctgc      180
aaatggcggg attccccccg atggagatat tggcaaaccg gccgtaacgc attatcaggt      240
cttgagagaac tggcatacgt cagctggata gaatgccgtc tggagacagg gcgtcccatc      300
agatcagggc acacatgaag cacataggcc atacgttgtt tgcgacgagc gttatggcgg      360
cgatcaaadc ctgagaggaa acaatacggc cattaccgcc gattcgtgca gaactgtttg      420
gctatctgtc cacgacaggc ttgcatgcca agacattagg ctttcgccat cctgtcacgg      480
gagtggagat cagttcgact ccgataacc tgccgatctt accactttgc ttgagcgttg      540
cgtacgttta tcgcctgcat atctgcagga caggactata tctgaacctat tcggctgac      600
ctcatacaaa tagtacaata ctttccccta catattaata aacagaacga tgaaaaaacc      660
aattgtggct gtcattgcag gcggttttcg ggcgaacatt cggtttcgct caaaagtgc      720
gccggcattc tgtccggctg ggaagcgagc ctttctccac ctttcttggt ctgatcgaac      780
gtgacgctgg tcggtgaagag tatcggagca gagagagggt ccaactggata agacgatttc      840
agctttgatc tcgatggcga acgaatacgg tttgactatg ctatatcacc atacatggaa      900
ctccgggaga gaacggtctg cttcaggggt actcgacatg atcggcatcc catacaatac      960
gggtgacncg ctcgtcgaat cctgactttc aacaaatatg tgtgcaatcg ttttctctcc     1020
ggct                                         1024

```

(2) INFORMATION FOR SEQ ID NO:892

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 515 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...515

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:892

```

aacttgtttt tttgtgaatg tcggattgct cgttttttta gtttcgcctt ttgtctctac      60
aaggtgatat cgagagatgc ttccgggttcg agaaaataag aatcgacaaa cgaaaaaaac      120
attgacgtgt actgaaaaaa gttgacattg ggccgggatgc aaccagtatc cattatgggc      180
aaacatttaa acaacttgaa cgccttagca tccttgagga ttacctctcg gggtcagata      240
gcaaatagcc attgagcaga aatatggctc aagtcatggc ctcattcgct cttgcttagt      300
aaatttggac tcgaagataa agttcatccg gtcccaatga aagggtcccaa tccccccaga      360

```

gtgagctacc cctgaacgaa aaagaagagt taagcagcta cgtaaagaaa atcgtgtcct	420
caagagtcgt ctcaagcgag agaactagg catcaagcct acaagctact tgtagagttg	480
gcagaagaaa ctacggcatt cagatacgaa aaaac	515

(2) INFORMATION FOR SEQ ID NO:893

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 331 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...331

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:893

cggccgaggc tccgcatcta cgccccttgc agaagagatt ggcagaagaa tcaccgttca	60
tggtacacag tcgtgaagcc tacgatgctg ctgtcgaacc agcgagatcc tctttggcaa	120
gagtacgaca gagcaattgc gcaagctgac gaggccactc tcctcgatgt ctttgccggt	180
gtgccgcagt atcatgggag cgcagcagga tagccacagg aatttcattg gtcgatttgc	240
tggccatgct accgatatat tcccgtccaa aggtgaattg cgcaagacgg tgaagccggc	300
ggagtgaagg tgaacaaaga gaaagtagcc g	331

(2) INFORMATION FOR SEQ ID NO:894

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 387 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...387

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:894

cgtttgccgg caaattatgc tcggcaccat actctcggta aagaagaatg gtagtagcaa	60
gcctatagtg ggtggaggga tcgtatatac tgatggtaag agtcgccta ttgctaccga	120
tttctgatat atattccatt tttcgggtgct ttgataggaa agcaaattgc ctttttgc	180

accggtcgaa	agtaaagatc	cgatgccaca	atggaagcac	catcagcttt	gtaatagctg	240
tgcgagtaaa	agcgattcga	aggcacgata	ggagagtctg	ataccggtga	gttcctaagc	300
tgccaataag	aggctgttac	gtagcgtttg	ttaatggcat	cagtactgtc	ataccttcng	360
gtgtaatcca	tgacgcccct	gccacta				387

(2) INFORMATION FOR SEQ ID NO:895

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 370 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...370
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:895

cttgettcgg	tctgtcatgc	tctctgcgac	aagctgatct	atcggcatcg	catatctatg	60
gcaatgtaca	ggtggagaat	gctgccgaag	tggtacgcac	tgggagcaac	tcaaactccg	120
cgaaaaggat	gggaacaagt	ccgtccttcc	ggcgtgccga	agtctctccc	tgcttttggtg	180
aagagctatc	ggatgcggag	aaagccgcag	gcgtaggttt	cgactgggag	caacgggagc	240
aggtaggccg	aaagttgaag	aagagctgaa	cgaagtccga	ggggctattg	tcaggaagat	300
cccgatgcca	tggaagcaga	gttcggcgac	ttgctcttcg	ccgggtgaat	gccgctcgtc	360
tctacggtat						370

(2) INFORMATION FOR SEQ ID NO:896

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 307 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...307
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:896

cggcacggtc	ttaaataccga	catggncaca	acagcagttc	ggtcaattcc	aggcacgatt	60
------------	-------------	------------	------------	------------	------------	----

tccgtattcg	cttgccacga	taagaatgga	cacgtccgac	ccgtttttat	gcggtaatgc	120
gaggaggagt	tatttcgttt	cctgcgacca	ttgagtgatt	taatctttct	tgttccataa	180
tgctgacatt	ttttttcgtc	taaagctcgg	agtgtgccga	tttcgtttcg	tgggctgttc	240
aaggtgccgg	agggtatatg	tcaaggcttc	ccgaaaaaat	acgacttgga	acgaagtgga	300
aatgtgg						307

(2) INFORMATION FOR SEQ ID NO:897

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 466 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...466
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:897

ggtataaaca	accttaccgt	tcatgtcgaa	cagagatacc	tgacgaccat	agctccggct	60
acatagataa	cgccattctg	aacataagca	ttagcctttc	gttggttaaga	acagcctcaa	120
caccttcacc	cttcttcaaa	tgaacaagac	atagatgttg	taatttaagg	taggaactgc	180
ttgatgaaga	gattcgacgg	agggaaagta	gcaccaccat	cttctgatat	agaaacccaa	240
tctcctaacc	atcaacggca	gggccctgat	cncatccgat	aggatgtcca	cctgggtatt	300
agcaatataa	ccaactatgt	aattcttgcc	ggcttcaatc	ttgcactagt	cttgagagca	360
agattgttga	tagtctgcat	ttcgggatca	cttcttctga	ttggggccaaa	atggtcatat	420
catcagccca	gactgcagat	ggtacttgca	cgctttatat	ccaggg		466

(2) INFORMATION FOR SEQ ID NO:898

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 987 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...987
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:898

```

ggaaaaagaa actttttgtc cgtaattaaa gcattttgca gattctgcga ttccggctat      60
cagtgcata ctaaggtaaa ttttgcaaga agcattcggc ggagttctga attcgaattc      120
ctttcttggc ctacacattc gggacatccg ccaacacacc ttcaagtctg gcaagacttg      180
ctcggccgac agagaacatc agtctctcgg aaatttccat aaaggatatca gaagtccatt      240
ctttcgatgt ctgaaagtct tcgttgctct atgaaatata cgtgccaaaa aagtttcaac      300
aacgaagctg agtttagaat cattccaaat aagtatccga aagaagcgga ttttgagggtg      360
aaagagacaa gaaagcgacc ttttggggct tgaattcgct ttgtaggagg ttgatttgcg      420
atttatatat aaaccgtttt catttgtata tagatcgttt ctaatttata tataaatcgc      480
ttttgattaa atatagattg attgccattt gtatataaat cggatagccc taaaggccct      540
atcgagggcc ataaataaag agacacgcgc aggttcacta tagaactcgc gcgtgtctct      600
ttattttgag tgctttatgg agaggatctg ttccttttat ttgtctgata cagcctcccc      660
tttattcaaa tactgcgatg tcgaattatc tgtcggggcg acaatgccga ccgcaaagct      720
cgcgtgtggg aggtatttca gtactcataa tttattatcg tttagtcgtt tattaagta      780
attcattcgt tcgaaagact gttcggtcgc aacattaagc tttctgtaga aactctatcg      840
gccggcaaat atagcgaagc cgaaactaca gggaatcgta attgcacatt caattatcaa      900
gtgcaacggg ctgccattt tatccgcggg ttatctgttt aggaatatgt gaagggtgaa      960
aagggtgtta agattcggca aaatagt      987

```

(2) INFORMATION FOR SEQ ID NO:899

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 407 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...407

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:899

```

gccggacgaa atgtcttcga aattacaccg acgctcgagt ttccaaccgc gttccaagtg      60
ggagtagcat acaggggtatc cgatcacatg ggtatagagc tcatgcaggg tatcagcttg      120
gcgaggcagt ataccatctt atggaggaac atccacttgg tcgatcatca aaaagagagc      180
taccgtacct taccgggatt tgagtttgca gtcggactac aattctatcc tttccgctga      240
cgatcagtgg aaatggctgt acagagttca caagcgggtg gcacatcggg caccgcgcga      300
agcgaacgat cctctttcct ccggactgac gaatctcgca ccgcgtgtgt gcgctgcgat      360
atattccaac aacatgccaa agacttcgct ctatagtaag ggctgtc      407

```

(2) INFORMATION FOR SEQ ID NO:900

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 431 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...431

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:900

cgcacggcaa	tctgtttccg	gcacgaagca	aagatgctcc	ctccgataat	atcagagaga	60
gcattttcgg	aacgacgttt	ctgctcataa	caaccggcca	tgcatagtcc	aacgatgcc	120
aaagctgcgc	cagccgatcc	acaccttggtg	cagaggcttg	tccagcatag	gcttcacaaa	180
catattcagc	tcggcagcag	ggtaatcttc	agtctgggtat	catcgggtgc	agcctctttg	240
agctgatcca	cacgttgaaa	ggcatgggag	agcgttctgc	ctcgaatttg	atcagtcgtc	300
ctgacgacgc	tctactattc	gcaaagtaat	ctgccccacc	ggatcactga	tagcgtacag	360
ctatcactgt	ctatccccgt	cagcttaatc	ttccctcggg	cagtttatcc	tccatcccct	420
tgagattgga	g					431

(2) INFORMATION FOR SEQ ID NO:901

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 441 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...441

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:901

cacacaataa	cttgtgctgc	attttcttat	tgtattttca	gaaaaagaac	aaccccaatg	60
acactccact	ttgtgtcggt	ggggttgttg	ctttagaata	agtgatcaga	ttattttctta	120
gctgctttgt	tgagcttgcg	cttttggtct	cgtaggcaag	gggtgtagca	acaaagagcg	180
tagagtatgt	accgatacga	taccgagcag	gatcgagaac	gtgaaactac	gcatcgtagc	240
acctcaaaga	tgaagattac	caacataacg	ataaacgtag	tcaaagacgt	atttatgttc	300
gacccaatgt	tgaattaagg	gcatcggtga	tcacctgata	gcgtctctgt	tgggggtacaa	360
tttcatcgtc	tctcggatac	ggtcaaatac	aacacgggtgt	cattgagcga	gtnaccgatg	420
atagccagaa	tagcagcgat	g				441

(2) INFORMATION FOR SEQ ID NO:902

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 515 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...515

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:902

ggcttcgggc	ttcaatggtc	agagcttcgc	tttcaaaggc	tacctgccct	cggagaaaat	60
gagcgtttgg	ctgctttcaa	agaaatggag	acgcggatta	taagtgtcac	gagacgcaga	120
tcttcacga	aacaccttat	cgaaacgcaa	actgggtggac	gaactcattc	gccactgccg	180
gccgacgacc	aaactagcat	tgctcccat	atctcctgtc	ccgacgaact	gattcgtact	240
cgtacctctc	ggaatggaag	aaagggaagc	ctgcactaca	taaaattcca	actacttctt	300
actctataaa	taatagatga	caccactacc	tcaagatttt	gtcccgctat	gcgcccactg	360
ttagggagcg	aagccgaagc	tttttttgca	gcctcgacag	ccctgcacct	gtaagcatac	420
gtcgcaatcc	taataaancg	gcatcggtac	cactgtaatg	gatctgcca	ccaataagtc	480
tgtgccctgg	gtccctcggt	acatatctgg	ctgag			515

(2) INFORMATION FOR SEQ ID NO:903

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 395 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...395

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:903

caaaccggcc	accacattgc	ccatcatacg	gaagtgaagta	tcgcgccacg	accgagcctg	60
ttgcccaggt	aatagcgatc	ggccacattc	ataccgcca	atagcctatt	ttaccatcta	120
taacggctac	cttcgggtga	ttgcggtgtt	tacggcgctg	gacagtatgg	ggaagaagac	180
cggcataaaa	ggatagcttc	cactccggct	cggcgcgagtc	gtttccagta	gccacggccc	240
gtagccacga	accacatga	tcgaatatga	ccctcacctt	cacgccctct	tgcacttgcg	300
tataagcaga	tcggacaggc	gactgccag	atgggtcatcc	tcttgacgta	gaactgaata	360
tgcatatggt	ggcgggcagc	ctctatgtcg	cgaag			395

(2) INFORMATION FOR SEQ ID NO:904

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 611 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...611

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:904

gccgacggcc	ggaatgtact	tgccggtact	cgccctgccga	taacgactcg	ttggtgctac	60
gggtgatcaa	cggtatgcg	ccgttcctg	ctgattcgca	ctgatcgacg	aatcgatcac	120
ctacggttca	tcgcaggaca	gtgcttcggg	aagaccgaag	aggagaatag	cgaatcgtgg	180
tggtaatcgg	gtatacttat	ggaggaagaa	cttcagtacc	ggatgactcc	cgagatggcg	240
gagctttcga	cgaagacgat	gcagaggaca	tctcggacgg	cggactcgac	ccgggggaaga	300
ggacagatac	gaacatttcc	gactgtagc	agatccggga	cagcacttat	tcgtatcgac	360
aaattccttg	tcgacaggat	gaacaacgcc	accgcagccg	tatccaacaa	gcggctgaag	420
ccggtgccat	attcgtcaat	gccgaccggt	aaagagcaac	taccggatca	aaccggggcga	480
tgtggtcacg	tggaaactnct	ccggccacga	cggggaattgg	agatcattcc	cgaagatatc	540
cactcgatat	agtgtatgaa	gacgatgtac	tgctcgtgat	caataagctg	ccggattagt	600
ggtacacccc	g					611

(2) INFORMATION FOR SEQ ID NO:905

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 375 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...375

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:905

ggaatgtgcc	gaacgaacct	ccgtccaaat	cgacacggcc	ataaggagca	gtcccaaatt	60
atccgtacgc	atattgacac	ttgccccaaa	agctccggac	cattggtgga	agtaccacaca	120
cctcgctgca	cctgaaggtc	ttcgatgaag	aggcgaagtc	gggcatattc	acccaaaaga	180
cggactgaga	ttcggatcgt	tgaggggtac	tccattggta	gttatgttga	tcgattggc	240
atcggggcac	gcacgcgaaa	gccggaatat	ccgatacccg	taccggcatc	gctgtggcta	300

ccacggaggg agtcagcatc agcagatagg ggatgncacg acctaattgg acttggaag 360
 gtcggccttg cgaac 375

(2) INFORMATION FOR SEQ ID NO:906

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 704 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...704
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:906

atcccccttac	gtggaccata	cttgccacct	ttttggctgt	attgtcatac	tottttataa	60
gagatacaag	gagaaccaag	ctcgccgtcc	tgtggtgaac	ctgaggcccc	ggctattccg	120
gcttatgacc	gagctattgc	agccttgaat	cattacgtgc	aaaaaaactg	gtggaagccg	180
gtttgtataa	ggaatatatta	cggaattgac	cgatttgctt	cggagctata	ttgccgaaac	240
tcgcgaatag	atgccaggga	gatgaccagc	agcgagatat	tacaagctct	tcagggatcg	300
aacttctctga	aaaaggaagt	cgcttgctgc	atggaatatt	gcaacggccg	acctggccaa	360
gtttgccaag	tataaacoga	tacatggaga	ggtgtggaag	ctattcgaga	tgctcgcgcc	420
tttctcgatg	aggtgcataa	ttccgggagt	catgacattt	gcatactctg	aattgctttg	480
gctgctgate	tgctgccttt	gatagcgact	tggtatatoc	tgcaagcacg	taagacttcg	540
caacgatgac	catatcttca	ttgaagccct	ttgaaggaag	tcgccgagtt	tgaggggtcta	600
tctgcgccat	tcgttgccga	tattgagagc	totttctgctg	gttttctcat	tattgctttg	660
gctcgctccg	agaataccaa	tagctgcaga	aagattcgat	cgag		704

(2) INFORMATION FOR SEQ ID NO:907

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 388 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...388

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:907

aaaccggctt	tcttgcgccc	gncttttgcg	ataagcatag	acgcctaccc	cacaagcaat	60
gggagcagca	gcagtaagta	taagtattcg	ggtgaataaa	tctgaacatg	ggaatctttt	120
tacgggttgg	aacgaagaag	tgtattggaa	gcaaaaactc	tgtcagcaac	aagagaaaag	180
caataagggc	atagacaagt	atttttcctc	ataagccttg	aagctcttgg	tcataagtct	240
cgtctctcca	atttgtcgat	ttccttgtag	atttcattca	gcgtttcatt	atcgcagccc	300
tgaagtattt	tccacccgat	acctcggcaa	ttccgtccaa	tgtggttcgt	ctatatcgac	360
aggcacattc	tgaatccgaa	ctccgaat				388

(2) INFORMATION FOR SEQ ID NO:908

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 447 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...447

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:908

agcagcatca	cctgctgtcc	gtgctcggtg	atgtctgtga	taaactcacc	gtatcggcat	60
cgtaaacagc	cgccccgcag	gggacttcta	tgatacgacc	tctccgttcg	ctccgggtact	120
tcgcttggtc	ccgcgcgtct	gtccgttgta	gccatgatat	gacgggcata	gcgcagatgc	180
agcagtgtcc	aataatccga	ttgccacgga	gaaagacatg	tccgccacgg	cctccgctgc	240
ctccgcgggg	ccaccttttg	ggatatactt	ctccctgcgg	aagtgcgtag	agccctccct	300
cccttgcccg	aacggcagta	tatcttgacg	taatcgacga	aatggactct	gctgccatac	360
gatggattta	gtagagact	ttgcggaact	tgccacaatg	ggagcgatac	gcaaagcgat	420
ctcttctatc	gtccccgtac	caccacg				447

(2) INFORMATION FOR SEQ ID NO:909

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 436 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature
(B) LOCATION 1...436

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:909

cgctcttcta	taaaatgcgt	gatgtccatt	cctttcagat	tctgttcttc	ccgatacggg	60
acaaacgctc	cacctcgca	tccagacgat	gaccgatcgc	tccagcagga	tatgcgtatc	120
ggacatattg	cgcggatgct	gtccgacgag	gtaatttcgt	cgaagatgcc	atccacattg	180
gtcagattga	aattgcgcaa	atggacaagc	acttggcacg	ccagttgctg	cggcgtatca	240
tcggaggacg	aaagtcagac	cgctctttcc	ggtagtgctg	tagcgcaagt	gtccatgtag	300
cactctccgg	catacggtat	ctgagaggca	gcaaattcgg	catgcccagc	tcttctcgag	360
aataagcctg	aaaatccttg	tgtaccgagt	cgatatctcc	gagatggcat	ttgcccgaag	420
tgctctttct	ctgaag					436

(2) INFORMATION FOR SEQ ID NO:910

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 585 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature
(B) LOCATION 1...585

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:910

ctgaagaatt	gtaccatgtc	tgccaenttt	ccgttggatg	ttcgctcgga	acaaaagcca	60
gattcacttt	cttcttcggc	ccgctcaaat	acaatatgta	cgcgcttacg	acaaagggat	120
gaaagccgag	gacaacctcg	atctcgacac	tgggtctact	tgggtgccag	tatcttccga	180
tggatcaatc	gttatagatc	attccggcct	ccacattcct	gcagcagtat	ttagcaact	240
gggggtgata	attottttgc	tcacgctggg	gatcaaaactc	ctcatctctc	ctctgcttac	300
aaggggtata	tctcctctgc	caaaatgcga	ttgctacggc	cgcggtacaa	gagatcaatg	360
ccaagtaccc	gggcanggat	caggaatcca	tgtgaagcgg	cagtctgcta	ccatgaatct	420
ctatcgtgcg	gccgggtgcag	gccgatgagt	gggtgcttgc	ctatgctctt	ngcagttccc	480
tttctcata	ccatgtacat	gtatttccct	acgactatcg	acattcgtag	cagagtttct	540
ctggggcgaa	gacctctcct	ctatgatgct	ggtttcagct	ggacg		585

(2) INFORMATION FOR SEQ ID NO:911

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 884 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...884

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:911

```

ctacgatgct cggcgccacc ctgctaaagg cctataaaact ctacaaggag gcggaataga      60
aattttcaga gaacacatga ccggtgctcct cgtgggcata ttgtggcctt catcgtagca      120
ctggccgcga tcaagttctt tateggatcc tcacccgata tggettcaag gcattcggct      180
attatcgat cttgggtggcg gtctgcttat cgtattgatg ctctcagggg tatccttagc      240
tgtctaatacg gaaaaatgaa acaaataaat cgtccgctcc acctgcgcga gggaaagtac      300
tataacttcca caaacctctc acatggactt cgttcgactt ggtaataaat tccgctatcg      360
ggcttgctcgt cggatgggta tcaagaagtt gccgtagggc atgccggcac attggatcca      420
ttggcatcgg gcgtgatgat ctgtgcacgg gacgtgccac gaagcaaatac gatgtgctgc      480
aggccggcac aaagagtaca ttgccgccat cagactgggt gctacgacac cgagtttcgc      540
aaggaaacgg aaccggatgc tttcttcccg tacgaacata tcacgcgcaa tcgatcctgg      600
acatactacc tcgattcacg ggaacgatag aacagggtccg cccatattct ctgctgttcg      660
cgtgaacggg aaacgcgcac acgattggct cgaaagggga aagagggtgga gatgaaaacc      720
cgtacgttgc agatcacgag atcgaactac tggagtatgc cctacccttc atcacgctac      780
ggatgtatgc agcaaaggca cttatatacg tgctctggct cgtgacattg ccaagccctc      840
gaatcgggag gacatttga ggcattgcgc aggacaagag tagc                        884

```

(2) INFORMATION FOR SEQ ID NO:912

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1020 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1020

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:912

```

gtggaggatt tgttgtctta tataggaagt atcagctatc cgaacagcaa gcgaagcatc      60
tggtcgggat ggcgcagatg ctttgctctg attttgagga gtggtaccgg acgagggtgc      120
ggaactaacc aaactgcccg gcgtaggcgt aagacagcca acgtgatagc ctccgtcgtc      180
tacggcaaac cggccaggcc gtagatacgc acgtattcag agtatcagaa aggataggcc      240
tgaccccggt tcgaagtctc cgtagagac ggagcgagag ctggttcgct atatccggat      300
gtgctgatac cgaaagctca tcaactggctg atcctgcatg gacgtacgtt tgtctggctc      360
gcaagcccaa atgtgcagac tgtggcatag cacattctgc cgctactact cgaaagtttt      420
taagaagaac agtacagccc tccgaaaaaa ggggaatgat aaggcctgtt gtgcaataa      480
tatccgcaca atgctccata ccttaattcc ggaggcaata tgaatcgaga aagctttttc      540
tcctgcttgg tctcttattt gctctcccgc tccatctgca aagcatcgct ccatgcaaca      600
acatggcaga tacgacttgt atatccgatt cggccaaatg tttcctcctg ccatcggtgt      660

```

```

ttaccatgta aaaccgatga aaaacaattg cggcattccc tgcctcttgt agctgcttct 720
ctccttactt tcaactggat gacaatatcc gagagcttcg ctttaccggt gccgggagct 780
ttcaaccaag atagacaacg tcagtcagct cggttcctctt atggcacagc tttgatgagg 840
ggattcggct ataagggacg cagcaaatca tggggaaaaa tgttggtgctg gatgccttgg 900
gtatggcact tatgggtgga atggtcaatg cggaaaaatc tcgttcggac ggttgcgctc 960
ggatggaact gctgcccaatt atacccatca ggacatacgg caacagcttt cgctgcgcc
1020

```

(2) INFORMATION FOR SEQ ID NO:913

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 353 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...353
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:913

```

tgcgatgtga aattcgattc cccatgggtg atgggttttta ctatatttgc ggccaagaat 60
gctcctatcg agagtataaa actctttgct aaaagtgcta taggattgat atagaacgat 120
attgacaaac agtttacgac caaataaaaat gaatatgcca catatactcc ccggctcatc 180
aggccgggtc catccccccg tatccgcatc accgccccgc cttgttcgga caaagcaaga 240
atatacctatg acaaataaag aagaataacg cttccatagc ctcctcaaag agtcaggcac 300
ccatcgagtt ccctatagaa ctggtgggtg cctttgtttt atccctcccg aat 353

```

(2) INFORMATION FOR SEQ ID NO:914

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 924 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...924
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:914

cgatccggca	gccggatcgg	tgctggccat	agccgaagct	ctgaccaatt	cgtctttgct	60
ccgcttcgta	atggtatcga	gggtgtgagc	ctgtcggcaa	ctggatgtgg	ccctgccgta	120
acgaaggcga	agatgcccg	ctgtacctgc	cgtggaagcc	tgctcgga	ttgccgtcga	180
tctgggcac	aacatcctac	cggcaaggac	tctctgtcca	tgacacagaa	atatgaggac	240
aaaaagtgt	gagtcgccg	acggtgatta	tcagtgccgc	agccgaagt	acagcattcg	300
tcgcacgtc	agccccgtcc	tcagccatat	agccgctacc	gcttctacta	tatcgatttc	360
agcttctgcc	cgttctcatt	gggaggatcg	gctttgcccc	gagcttgggt	actatcgggt	420
atgaagtccc	cactgtacgt	gtccggaata	cttccgcgat	gcgttcaata	ccgtacagga	480
actcattgac	agggtctggt	tctggccgga	cacgacatat	ccgcaggcgg	tctgattacg	540
ctcttctgga	aatgtgcttt	gccaatgtag	taggcggtct	ggagggtgat	tggataacct	600
cgtggaagac	gacctgatca	aagtcctctt	tgccgaaacc	cgggtatcct	cattcaggta	660
aaggaccgca	aagccgttga	taagatctga	ccgatgccgg	catcggtttc	ctcccgatag	720
ccaagccgac	ccaaggcgac	acctcttgat	acataaagac	ggagccgaat	acctgttcgg	780
tatcaccaca	tgcgcgacgt	ttggtatgag	tcgtcctacc	tgctggactg	cttcagagt	840
gcaatacctt	ggccggcaac	cgttcgaga	ctataggaca	cctcgatat	cacttccag	900
catttacggt	gatctgaagc	gatg				924

(2) INFORMATION FOR SEQ ID NO:915

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 462 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...462

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:915

cgttcgtcag	tattgccgct	ctcctctttg	cgggtgtg	g	cactaaaaag	tcgccccgtc	60
tccccccaca	gtgaagcctc	ttccggacac	ggtgattgag	ctcctgtcat	cgaaccgtgg		120
gtcagtcggg	tgagagagga	aatgcgtggg	tatggctgac	caccatatat	ggactcgact		180
ggccacaacg	ctccgcccta	cggccgaagg	actgcgaaaa	cagagagaag	aactctgccg		240
tattcggaca	ggctcaagcg	tgagaaattc	aacactgtat	tctttcaggt	gcgtatcgcg		300
gagatgtcat	ttacccctct	gagatagaac	cccaatcgac	catttcaccg	ggacaggcaa		360
gccggactac	gaccgcgtgg	agtttgccct	aaagagtgcc	acaagcgang	tctgactttc		420
catgctgggc	tcattgtcac	cccttangac	cggataaaca	ca			462

(2) INFORMATION FOR SEQ ID NO:916

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 450 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...450

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:916

catgtgcag atgtgtcatt ccattccctg cgaacggaga taggctatgc cttctccata	60
tcctccggcg tatcgattcc tatcgtaact tgctgtgttg cagcactcga atccgatagc	120
cgtattccag ccagcgaagc tggtcgaact ttccggttg tctgcctac tttgtggcag	180
tgaggttatc ttgcggggac ggctgggcca aaggcataga tcccgatatg cttgtagtaa	240
gtatgcgacg gcaccaagag tcaggctgta ccccccctgag atatgggata acgggcggct	300
gaaataaagg gcatagcctc catgatccaa tacgatcttc ggggtgtttg attgttcaaa	360
cgctcgaagc ttacgtcaga cgagaaaact tcgctaactg anctatatcg gtttctggtt	420
tgctgaaggc cgaaatcagc aatcgatctg	450

(2) INFORMATION FOR SEQ ID NO:917

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 432 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...432

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:917

tcgtattgaa acggcgggca aacttgctg ccattctccat gttttgctct gatcttttcc	60
gacaggaact ttcacggcac gatggatcag aatgtctgtg ccattcaatgt cggatatgtg	120
agcaggccgg cattgacatt gtccggcgtc tacgggcttt ttcccttgaaa gatgtcgttc	180
gtccagctc gcccaatacg cattcatatt cagatagaga taaagctcga gcacctctct	240
tacatactct gtacatagat tgtagccttc tccggatcga tcccgcaagc caaaattcag	300
ccagtatcgt acgcacattg cggactatat tatccggatg cgggtgtgtg tcagcgaatg	360
ccaatcagca ataaagaaa agcaattata tcattgctgca tatccagaaa actccgaata	420
gcacccaaat aa	432

(2) INFORMATION FOR SEQ ID NO:918

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 411 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

- (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...411

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:918

ccaatgcggc	tataatagac	cttcgtgccg	gcaggatatcc	gcaggctctg	ctcgactcga	60
agcacgcaag	agcgaaccca	aactatggat	gctgttggct	tggcatatgc	ctacagcgaa	120
aatgggctg	aagccgagag	ctatcttctc	gcgctgcgca	gcaaggccgg	cccggagcac	180
aacacaatct	gaacgactgc	gacgctatat	gcaagacaat	ctctaaatgg	aaaaagattc	240
ttagaaacaa	tattcacttt	taaaacaaaa	acgagatgaa	aaaaacaaag	ttttcttggt	300
gggacttgct	gctcttgcta	tgacagcttg	tnacaaagac	aacangcaga	accggttgn	360
gaaactaacg	ctactgttag	tttcataatt	aaagcgggtga	gagccgcgct	g	411

(2) INFORMATION FOR SEQ ID NO:919

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 386 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...386

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:919

atcgtatcat	tcctaatacta	cgggatagga	atacttttct	tctgaaccga	taagcccata	60
gatatgatac	agaatatcct	cacagccata	acgggtatgt	cgtcctcggc	ctgattattt	120
atcgttttgt	tcgtctctgg	aagcgaaaga	ttcgggtgga	gcattgctccg	gttggttcac	180
caaataccgat	tgtgcctatc	ttccaaggcg	acagagaaga	agaacaatcc	atcatccctc	240
aaataaactc	tcatgaaaac	aggacggcaa	tactatcccc	tcagtatccg	gcagggaatct	300
tctctatcct	cattatttta	ttgatagtct	ttgctcta	accgcttggt	acaacggcat	360
gtgggttttg	gtagctgcct	tgtggg				386

(2) INFORMATION FOR SEQ ID NO:920

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 625 base pairs

(B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...625

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:920

aatcagctct	gcagcaaaag	agctcgatga	aactcccatg	caacagtcta	ggatgcagtt	60
gcaaccttct	gtatcaaaaa	ctcaggtata	tgcttgatc	ctaagcaact	tcggctttat	120
cgaggacgat	tgcttagttc	gtaacggggt	gaccgcagcg	caccaaactcg	gcatggctga	180
tatgccttgt	tccatgggaa	gtgttttatt	gccaaagaaa	accgtatgga	tgtaaagtga	240
atctgcggtt	gattctctgt	attggtcgta	atgatcaact	ccccctgagg	ataaactgcg	300
gattgagccg	aatcctaact	cgggggaata	ccggcgaggt	caggtatagg	tggggctgcc	360
cggacagtca	gggtagaatc	ccagcatgga	atgacaagcc	aagcactcat	cgtaccggca	420
tcgtcattac	cgggcaagcc	gtaggagcat	tgcaaaaatg	tttgtctatc	aactcccggg	480
tcaattttctg	gttcgccatg	cttccttggg	gaaataggag	aagaggtaag	gataggcgag	540
tccggctcgt	tggtcggatc	ataatatcct	tcatcgaaga	cttttctgaa	ccttttccga	600
aaaaaccttt	gctcctncca	tcage				625

(2) INFORMATION FOR SEQ ID NO:921

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 662 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...662

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:921

cgccgtgaag	ctaaaagagt	acatcgaaaa	caacatcatc	cagatagcac	attggcctat	60
atgagaggac	gtacgctcaa	cgatgccgtg	gtcattctga	cgaagctcag	aatacgaccg	120
agttgcagat	gaaaaatgtt	ctgacccccct	tggtgccaat	gccaaagtga	tcgtcaccgg	180
cgacattacg	cagaccatct	tcccagaggt	gtgcactccg	gtctgcgtca	ggctctgaat	240
atcctcaagg	aacgagaggg	ataggctata	ttgcattcca	acgcgctgat	ataggcgcca	300
tccgctcgta	cagcgtgtgg	tggatgccta	cgaccgggtac	gatccgaacg	gaaaaaggag	360
gccgaagccg	cagctgtcgt	tgcgcaaacc	attagaatca	ggcgatatcg	atattattac	420

gaatcactta gcatacaatt ccgatgaang aaacattagc tcgtaccgac ttcagactgt	480
cgggacagaa gccgtatata acggcaaggt gcgcgacgta tacacgttgg agaattgatct	540
ctgggtcatga tagccacgga tcgcataatcg gcttcgacgt agtncttngg ccggtatcct	600
tacaagggtc aggtactcaa atcagatagc ggcacacacc tcgatgccac ttcgcgatat	660
ag	662

(2) INFORMATION FOR SEQ ID NO:922

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 456 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...456

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:922

cgccatatcc gacccccaaa aaccgtcagc ggcataaggg ccgaacacta caatccctgt	60
tctttctgctt cttgcaccgc cggccgggac gtgtcgcttc ctccgtgccg atcagtcgcc	120
tgctgcgggc atgcggattc agagccagac ggctatccgc ggacgtacta taccgaaatc	180
catgcggagg ctgcgacgaa agccttcagc ttgtccagga tttgctcccc agtgataagc	240
gatggacgcg tgctatcggc tcgtgcatcg ttaccaaagc tgtgcggagc ttatctgcgc	300
caggatcatc agcgcattct cgcctcttat gccggcttgg gccgcaagta ttccgtatgg	360
cctttgtatg gaaagatgtc ctgcggcatg gcgctttgtt gatcggcatg gtcaccagca	420
catccgcata gccttgcttc aggcttggtat ggccat	456

(2) INFORMATION FOR SEQ ID NO:923

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1116 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1116

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:923

ctccgttccc	atatatgatt	cagacgatcg	aaaacagact	gataaacggg	gcgaactaac	60
ccttgaggaa	gcccttctgc	tggcctcctc	tgccgatagg	aagcactcta	cgaggctgca	120
catcggatca	cccggtatth	catgggcata	agttcgacac	ctgctccatc	atcaacgccca	180
agagcggcaa	ctgtccgaag	actgtaaatg	gtgtgctcaa	agccgccatt	atgccgcttc	240
gataggaaat	acggacttct	ttcggccgcg	gtttgtgccg	ancangccgc	ttacacagge	300
ggcaaggcat	cggacgcttt	tctcttgtgg	ccagcgggcg	cacgcgtcta	tgaacgagat	360
acgacagatg	gccgaaaagt	atcgtgccat	cagcaacgaa	cggacatcaa	atgctgcgcc	420
tcttttagggc	tgctctcgga	gagaaactgc	agatattatt	cgacaacggg	gtgaccacct	480
accactgcaa	atggagacgg	ctccgagttt	cttcccctcc	ctgtgcagta	cgcacacgcg	540
gacgaaaagc	tcgccaccat	tcgagctgca	cgcctgtgtg	gaatgcgtta	tgacgtggcg	600
gaatcatcgg	catgggggag	acgatggagc	agcggatgaa	tttgctttct	acctgcacag	660
catcaatgtc	tactccatcc	cgatcatatc	ctgcagccga	tccccggcac	tccgctggag	720
aagactctgc	ctctagcgaa	gaagaatacc	tcacgactgt	ggcactgttc	cggctcatca	780
atcccagagct	tttcttcgct	tttcggggag	acgggcacaa	ctaagccctg	ccgtcagcgc	840
aaagctatat	atataggtat	caatgcagcc	atcacgggcg	attcctcacc	acgacgggaa	900
gcaaagccgc	tgaggatatg	cagctcgtga	ggaatgcgga	tttcaagtga	ctaacgatac	960
agactgggag	gtaagctatg	ccattgacga	aatgctgcgt	ttggatcgca	accacctttg	1020
gcatccctaa	catcgactat	agatccattg	ccgtatttcc	gtgaagcggg	ccgaggagac	1080
gcatctatct	ggaagacggc	cgcgaactga	tcgacg			1116

(2) INFORMATION FOR SEQ ID NO:924

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 394 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...394

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:924

caatagccta	tttattagtt	gccttggggc	tgctattcct	gtaattgcag	aaaattcatc	60
gagaatgaga	cttcttccga	agaaatgagc	tatgaagatt	caaaaaacag	ctctttgagt	120
gcagcgagggt	agatgacctc	atcaaaactat	taataaatcg	ggttattgcc	gtccgataaa	180
agttgtttga	ttgctcccag	ctttttgatga	tataaaaaag	caggatatga	tcctccagga	240
tcgatcctgc	ttcattcaaa	ttaaatatca	tottatccca	ttattgaact	atgagaggga	300
ctaagctcct	gcttccttgt	tgaagtttaa	aagtgatattg	tttcaccctt	gccgaaagtt	360
atcttcctat	atatacgtnc	taaagatatt	gggc			394

(2) INFORMATION FOR SEQ ID NO:925

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 295 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...295
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:925

cggcgaatct tcatcttcac taagtgggtc tacctgatct tcaggagcag taccagttcc	60
tgatgagtag gaatggcttg tttacgaatc ggacaattgg attctcgggg tctatcaaac	120
tcaaataata aggtgtgata gccattcgag tactttgagc gattctttta ctccctcttc	180
ttcttcagcg gtgagttaac gtactttttc agctggtcga gcgtctcaat tcgattgagg	240
acctgcaatg ccagtcgttc cattgctcat cgggtgaacat cagggaaata atact	295

(2) INFORMATION FOR SEQ ID NO:926

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 357 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...357
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:926

cgcggttgga aactgtgcaa aacgaaccac ctcggtacca ccgaaagagg tctcgctcaa	60
ataagtcata tcacgggttg ccttggtcc ttcttatag ccttttcgag agaagacaat	120
acatcgccat agacagcact cttgcggtc tacggatcca gtctgcgaat gctctttcct	180
cggcacgctt acgaccatca cgtcaagacg agcgagaccg cggttcatac cgatcgaatt	240
cttccatagt tagcactctg agcatacttg ctggcatatt tgatacgggt agccgatctg	300
cgctcatggc ttcttccag atgcctttgc ttgantaccg cgacttcgat acgaggg	357

(2) INFORMATION FOR SEQ ID NO:927

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 342 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...342

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:927

cgcaagcgtg cgatacgctt cgtcttttggg ataatggtag caatagctca gagacgcgct	60
ccaagcagag aagcattaaa gaccgtatcg ttgccatcaa ggggctatac gaaaacagga	120
agccatctct ataagcagta cgatgtaatc cttaatcaca aattgagccg ccgagagagc	180
aacatcaaga tactccgttg gcgtgtaacc tcatacgccct ccatcagagc cgtagcgcag	240
aaattgtagc cacaaccgtc ggcgtatatt tagggaaaag gaaaagtctg cgcgttgcca	300
atcaaaattg tacccccagc aagccccact atagtcacca gg	342

(2) INFORMATION FOR SEQ ID NO:928

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 521 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...521

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:928

anggggttat tctttcagga ctttgcatgg cacatgattg ttcgacagta gccgactgct	60
aacgcagata ctccgttatg ttcttttcta ttctttctcc agattgctca ggtctgcctt	120
ttcgaagggc ttacctacca ctgcctctac aattctatgt accgctccga cacactgtcg	180
cagtatgctt ccgtcatttc ggtatttgcg ggccgggctt gccctggaaa ccgttctcga	240
tcagcaactga cgaacaaact ccttgataaa ctgcttctgg gcttcgcccc gttcaatcgc	300
tctgatagc cctcggcata gaagtagcga gaagagtcog gogatgtatc tcgtcgatca	360
ggtagatctt accgtccttc ttgcgaatt cgatttggtg tccacaaaa taagccccctt	420
ttcagcagcc atttgagtac ccgtcgaata agtgcgtaag tatagcgttc tatctgctcg	480
tagtcctctt cgacaccagt ccctgagcaa tgatttctg a	521

(2) INFORMATION FOR SEQ ID NO:929

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 338 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

- (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...338

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:929

cccaacaaga	actcggtaaa	aattatcggg	gacaatacga	ataaatactt	caggcttact	60
tcgcttacga	ctcgaagtaa	atcgggtgga	ttcacctgtc	gcaccttcgt	ttcggcgata	120
cgccatacag	ttctacctac	cttgtgggac	accggacttc	gtggcttgcc	acgtgcctgc	180
ctacttgctg	atgtacacgt	gctgaaaggt	ctgaagaaaa	aaggaaacttt	cctgctcaat	240
togattgggc	tccggaagat	atagaacagc	atctgcccaa	caaggtaaag	cgtttttggc	300
taagaacaac	atccgattct	acacgattaa	cgctactg			338

(2) INFORMATION FOR SEQ ID NO:930

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 342 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...342

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:930

gatagtgcag	acaaggtgac	ggtggagctc	gtggacaagg	gcgaaggtct	ctatatgcct	60
cgtatgaagg	tcaaaactgc	tctgaagggc	gtccgtatga	gcgtgccgag	cgtgtccttg	120
atgtgcctta	cgctctctcg	gtcnagcgaa	tagaacaaca	gcgggtggatc	ttcatcctcg	180
gacaacaacg	aacacacggg	ctgtaaacia	agcattttaa	agtgacaacg	ataaatatct	240
gaacgcctta	ttcgacaata	catccctaaa	gattcttcgt	tcatcgatat	aacgccaac	300
agatctccat	tatgagacct	ttgaaaaata	ataagtggag	ga		342

(2) INFORMATION FOR SEQ ID NO:931

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 329 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...329

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:931

cagaatctta	ccgaatacca	cgagcaagaa	tacaatcatc	aacgctcccc	gatgcggtag	60
cggcgtacgg	ccttgatggt	caccggattg	tttgtctctc	ctgtttcata	tcggtgtttt	120
atttcttgcg	ccgatcagta	tcgacagacg	gtagagaatg	tatggcggag	tctgcgagag	180
tgtcagctcg	aggtttgcga	ttggatggct	ttctctacat	tcagtttctg	actcatagca	240
gtaactcaga	agctttgaac	agggcacgat	agcgataatc	tttcaactggt	tcctcagacg	300
gcctatttcg	cgcacctgct	cgatggctt				329

(2) INFORMATION FOR SEQ ID NO:932

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 785 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...785

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:932

agtgtcgagg	gccattttct	gtgctatagc	cggacccttg	atgtcgtgta	gataatggag	60
aggagtctgt	ttctgggtgc	attcattttct	cgcagtcttt	attttgtctg	tatctccttg	120
ctgcatggat	gataagggta	atgatgggtgc	caccaacagt	gtggatatta	tgataagggc	180
aatatgtaat	ttgcgactaa	atgtaattcc	tggtttttca	gtgctatttc	ggcctctttc	240
tctttctttt	gaaccgaatg	tcaaactccg	taattttttc	ttgcatctgt	ttggggcaat	300
agagtctgcc	agaagtttgg	atcttttttg	gcattcataa	gccaagagta	caagccgtat	360
tcggcatata	tggaactggc	tatatccaat	atgccaatct	ggtttgatta	taccgggcac	420
ggcatgccaa	attttctgcg	atgtgagcac	ttcatttgct	ttgccgtatt	cgcttctcca	480
tgcataataa	atgcaagatg	tgcataagat	agggcctgga	tctcgatata	atttattttg	540
atgctattgt	aagagcttct	ttcaaaggct	tatagctatc	ctcaggattt	tctcattgat	600
cataattgtg	ccgatattca	tgagactggt	gcacatatta	cactatcacc	attggttcgt	660
tgtatatcca	aagctttggt	ataataggag	taggcttctt	gagtatttcc	ttttttttga	720
taaatggtag	ccatgtgggtg	taggctatag	agataacctct	ttcctccttt	ttcttttgag	780
cgatt						785

(2) INFORMATION FOR SEQ ID NO:933

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 813 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...813

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:933

ggacactaat ggtgaaaata gccaattgtc ggtttgctgt tgttataaaa acaatatctt	60
tgttcccatc gtagtggtcc ctgctcgtct cgaacaagtg agtgggggtg aagaggggaat	120
cgggtgagaa tcccgagcag tcccgctctg taagctttta ccgccgtgtc ggttttgaca	180
tgcggactct tgtcgcttcc aaatgatgcc actgttcatt ctccactatt agaggtggag	240
ctgaagggaa ggcgcgacaa acagaaaaga gatgaagtaa gccagaatac ctgctctacg	300
agttgcctat aaagtatgga gagaagacct cgaggaaagg agttccccgg cactaagaga	360
atagatctca ggaagtattt ttttacaata actattacaa tggaagaggt aatccttcgc	420
atcgtaaagc gtgatggcca ttgcagtcgt tcgatccgga aaaaatccgt caggcgataa	480
tcaaggctta cgcgcaggag gtgtgcacga agaagctgca cgtatcgaca atattgtccg	540
tctgtaaccg attttgctcg tcagagcggg gagcttgcca ccgtggaaaa atacaggatc	600
gtgtcgagga ggaactgatg cgtttgaatc ctttcatgcc aaaaaatata ttatctatcg	660
agagtggcgc accgtagagc gtgacagcgt acatccatga agcatacgat ggacggcatc	720
gtaacgatag agaagacgat gtgaatctgg gtaatgccaa catgagttcg catactcctg	780
caggcaaatg atgacttttg cttcggaagt aac	813

(2) INFORMATION FOR SEQ ID NO:934

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 519 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...519

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:934

acgttgaaac	ccaacgacca	caagctctcc	gcattaccca	gtagcacatc	ttctgcaa	60
aaccggctat	atccgccgca	aaggcatttc	cggcctgatc	tctccgggtg	tgtgagtgt	120
ttgggtctga	gcggatgtaa	cgcagtgaac	agccatggag	aagttctccg	acaactggcg	180
gctatagccc	aaatcgcagc	aaattcattg	ggatgggcct	ctcccatgga	ttcgcccaat	240
tcgtcaaagt	ctccaacttt	cctaattgtg	aataacgcag	agaagcacta	atagctgatt	300
ctcgtctgtt	cccaatttgt	agaaaccggg	catctgcata	aggcaatata	attgaccagc	360
ttggacagcc	aggggtgtata	tgagaagcta	atccggcgtt	cgtatccatg	aaagcatatt	420
tactcggatt	ccaataactgn	gatacgcata	cgcgtcgttg	ccacacctat	atccccata	480
ccggccngna	gtgcatccgg	actggatatt	cagcgatgg			519

(2) INFORMATION FOR SEQ ID NO:935

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 473 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...473

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:935

gacggaagac	cggcagtttc	ggcttgcatc	tgttatttac	catcgtcatg	cgggtgggtggg	60
tacttggtcg	gcagctgcag	gacattatgc	catcactgtt	ttgcagccgg	actcgttata	120
ttttccgcct	tgcggttgcg	tttacttata	ggcgccatct	tcaagatctt	tccctgctct	180
tgaatgctat	cgagaaggcg	attattccgt	gcgcttttcc	gaaatgggag	gcaatgtctc	240
gcataacat	tcaaccgcac	gcttaatcgt	atcaaggaga	tcctcaagcc	gttcggtgat	300
gaggctatag	ccggcgagca	gtttctcgta	catgtattgg	aacgattcct	gtcggcata	360
tgatggttgc	tccggaagga	tatgtctatt	ctccaataca	gtgctgttgc	gcctcctcgg	420
gttaccggtt	atcacacacc	tcgatcagct	aaacgtgtgt	cgcgggacat	gcc	473

(2) INFORMATION FOR SEQ ID NO:936

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 376 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...376

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:936

```

ggcgatgagt tcgacttctc cgtattggca ctttatgatg aaaaacgcta tcagttggga      60
ggagggcgtct ataatgtgca gaaggaaaag ttcaaactaa tgttttctat cagagtgata      120
gtgcaggcgt ctaccaacca tatatcatga aggcaagatt aagggaacagt tgcttctgcg      180
cgtgttgggc atggacgact ggatgccaaa caagagcctt accctgatgg tacgtacgac      240
tttgtgatgg ctatacgatc ctccctcaga aaggagttgt gatcctccct accgggagcc      300
gttcggaaaag acccttgccg atgccgtttg gcgatcctga ttgcnaaaaa gncgtgttcc      360
agaagccttt ttccat

```

(2) INFORMATION FOR SEQ ID NO:937

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 496 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...496

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:937

```

gaggatgatg gacgtatcag tagattcggc caaagtccta taatgtctaa aatgccttct      60
tgcgtggggt tggtgtagta aggagcaacg gataagatgc atctacaccg gtcttggcca      120
tgggcttgga atccgattga cgaggcgtcg gtgtagttgc ctccggctcc aacgatgatc      180
ggacaccgtc ctgccacgcc tctctgactg tttgcaatat cgcagagcgc tcggcatcct      240
cgatgtgggc gattcaccgc ttgtgccaa g tactacgatg tagttggcac ctccgctacc      300
tgataatccg ctaaaagtcg aagcgattcg tggctctacc cgccttttcg tcgaangggg      360
taatcagggc aacccccata cctcgcaact gtctctgtca attcgtattc tatttttagaa      420
acaaaagtaa aaataatggg acaatggant tgaagtgggc atttacaatt cggagaaaact      480
gcagaagtcg aaaaac

```

(2) INFORMATION FOR SEQ ID NO:938

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 467 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...467

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:938

tcggagagag	acgtttttcc	ttcgaaaaga	taactgccat	ccccaaaac	ttaaagggga	60
gttcttccctc	atcgtaactc	tccgtaatct	cgccgacgtc	tcttcccaat	atgtcctcca	120
ttgtgatcag	tccgcaagt	ccaccgactc	atccacaacg	atggagacat	gcaccttatt	180
ggctctgaac	tcccggaac	atcatctatg	cgcttggttt	cggggacaaa	atatgcttta	240
cgaatagagg	atgccagtcg	aattcatcgc	ctttatccat	gtgtgggatt	agattttgat	300
gtaaatcacc	cctttgatat	tgtcttctga	cccctctgaa	acggaagtct	ggaataaccc	360
gacgaaacaa	cgaagtcaag	catcttacga	aaggccagct	cagatccaca	tccacaatat	420
cgatacgcg	gaaccatgga	ttcgagggt	ggcttattat	aggaatt		467

(2) INFORMATION FOR SEQ ID NO:939

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 876 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...876

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:939

attgtggcac	cctttaactt	tggcggtga	tgaagtgttc	acccaattng	gaacacacgg	60
atccaaattt	tgggggagaa	aatgatcgag	cgtggcataa	acctgaacct	tgaagtcttc	120
gacaagagca	tgatcgnaca	tggctctcgt	cttcaccgca	aaggttatat	ccaatcccc	180
atgcacttcg	acttcgaatg	gggtgaaatg	gcggtatcag	cggagaaatg	cgtgatttcg	240
ttttcttcgc	gaaagtatcc	ccgcagatgc	cacatatact	gtagcagggtg	tgggcgctat	300
gagtttcccc	tgcgcgcact	ggctatcatt	gatggaggac	atggcgtgta	ggtttcgaag	360
acaatgtata	tatatccaaa	ggagttttag	ctgctcta	ggagaattgg	tagaaaaagt	420
ggttcgtatg	gccaaggaaa	tggtcgtgag	atagccactc	cggcagaagc	ccgtcggata	480
ttggggctta	caaataacaa	ctccaaaact	cacaaaattc	actcaatacg	tttcgacaag	540
caaaagaaag	gaaacaaata	cggcacacac	cgtgttttag	cccctcaggc	gttctacccc	600
agcccgcgtga	aaaagtggac	aacaacatgg	atgaaattac	gacaatgaga	ttcttatcga	660
tgtaagact	ttgaatatag	actctgaagt	ttcacgcaga	tccatgaaca	agcccgggtg	720
agataaggct	aaaatgccga	aatcatgctt	ggcattgtag	ccaaacaagg	aaagcatcgt	780
aacctgttac	aggctcaggc	gggatgcttc	tgcgcgtagt	tgaaaagatc	ggcatgctct	840
caagacaaaa	tcgacttgaa	agtaggcgat	aaaaatg			876

(2) INFORMATION FOR SEQ ID NO:940

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 391 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...391

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:940

tcgactctnn	aggatccct	gataattgat	ggaaaattcc	acatttcttc	agaaatttac	60
acntatggta	actttttgat	aattatagtc	ttacaccgc	tctttttgga	tggtcatctc	120
atttcttcta	aacctattta	tgatacttc	tcccatttct	ccttgaacca	cgcagcaatc	180
ggaactctgt	ccacgacagg	tcaagcacgg	tcttgccatc	cctttcctcc	ctgcccacct	240
tcaaggtacc	ttctcaacgg	tgaacgaacg	cttgactca	tccgaaaaca	gtttcccgta	300
acgacaagga	cttttcctg	tagcagttca	tcagtatgtc	tctggataat	ccgaccgaac	360
ggcaaactcct	ttctattctg	aggaactcgg	c			391

(2) INFORMATION FOR SEQ ID NO:941

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1062 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...1062

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:941

tctcggtac	gatcattata	ctctataccc	tctatgccac	agacggcgag	tcatatcgag	60
gaatggccc	tatctgtacg	tatctgtctt	tcccgttgca	ccggactttt	ccattatctg	120
agacacgtga	tagtgaaagg	ctgtcatgca	atccgaccga	tatgctctat	caggaccacg	180
ggctccagct	ttcgggtgtg	tgtggatcat	tctttattcg	ataagccctt	atgtcgcata	240
ggccctagcc	atattcgatt	tcgacggtag	gctgaccgga	tgcgattctt	tgctcccttt	300
ctgcggcaag	cccagctcgg	ttattctctt	ttggctcaga	ctgctttcta	tctggccatg	360
tggatgtgct	acaaacttcg	gctggctccg	gcgaccggac	gaaagcagcc	atcctttcca	420
cagtcttgaa	aggaaaaagg	gggtggaatg	ccgggcaatg	ggacagcgat	tctgtcctgc	480

tatcgaaagc	ttcttcgtcc	cgaagccctt	cgctgtttgg	aatggcatcg	cagcgaaggc	540
atcggttggt	gctactgaca	gcctcgcttc	tgccttgtgt	ggagccatgg	ctgaaaagac	600
ggggtttcat	accgtcattg	ctacccttcc	ggagataaat	ccggcattct	gacgggtcgg	660
ttcgaaggca	ataactgcaa	gggaaagaga	aaatccacag	gttggatcga	gccttgccgc	720
attggcgaga	ttcgactcct	atggctatgg	cgatagcccc	tccgaccgcc	ccttgcttag	780
cctcgcacac	attcctacta	tagaagattc	cctgctctat	agcctgccgc	cgctccgtat	840
cgtttgagga	ttgtcgattc	atcgggtgtcc	cgatgggtac	ccttttccta	cccgaccata	900
aaccgccatc	agagcagaaa	aaagctctct	ttggatttcc	acataaacga	ctgcaatgca	960
acggtttgtg	atttttcagt	ttacacataa	attttcccg	cctggaaaaa	atattttcca	1020
ggtcgggaaa	catcttttcc	acgggtggaa	aatattcttt	tc		1062

(2) INFORMATION FOR SEQ ID NO:942

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 498 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...498
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:942

gccaaattca	gcttggccat	gaataccgcc	aagctgacag	aggtggagtc	tctctttata	60
acacctttga	caaaggcacc	ttggtccat	tcgaccccc	gaaacgaatc	cagacttagc	120
attcaaaaaa	agattttgtg	accgagcggc	cggagctgat	tttgataatc	agaaaggggt	180
caaacctgtc	ggtcctagaa	tttcttttat	ggtttcgagc	gtaaaaatc	agttattgct	240
gcgggggaaca	aatctcttgc	ctgatcataa	aaggcaaata	tcaaggtagt	aatgcttttc	300
ttactacaag	atagactttg	tccatcagga	cgacaagacc	taggttacga	catcatacgc	360
aatcacttct	ataaggtgac	gatcaatgga	tgatttaaag	ccggatttcc	cacaatcgag	420
cggtcttttc	aggtgctgct	ggaacaacat	agctctctcc	gaggagctgc	aaatgtaccc	480
cgtctttctc	gacggaaa					498

(2) INFORMATION FOR SEQ ID NO:943

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 538 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...538

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:943

tgcgcttgct	gcctgtcggt	tttagcggtga	tggcacacat	accgtagcga	caaacttctc	60
gatcaacttg	ctgctatcca	tccccttata	accgactgga	agtagaatcc	gtcagccagt	120
ggttcaattt	gccgtcctta	tcatagagat	attgaagccg	ttgtcaagga	acattttctt	180
catgatccga	gccttcggcc	atattcgatt	acagagtcgc	ggaagttata	ttctccatca	240
ttgcagcttt	gagcatggca	gccatacccc	attgtgcaga	gtgagtggct	cccagagacag	300
agcatacaga	gccgatgatg	acaatgcctc	gccgaaacgc	agagcccgaa	tgactcttcc	360
aagtccggat	actcacgtct	cgtagagctt	gccgatatca	tgagtactcc	gatgcgctga	420
ccggcatagc	tgaatgcctt	gagctggaga	gagncaggga	tataatggtc	cgtggtagtt	480
ggctacggaa	ggttgataga	gcggctcacc	cggatgggna	ataggtcctt	acggaaaa	538

(2) INFORMATION FOR SEQ ID NO:944

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 661 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...661

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:944

ccgtcttata	cttgctgtcg	ttttcggtct	tttcggcctt	atattagagt	gtttgcagac	60
ggttacgtgg	cacatgctcc	tttgacttcg	gactggattc	tattccttct	tggtatgatac	120
tctgtgccac	gatectccgt	atttatntag	tagccgtccc	ggttatggcc	atcgttttca	180
gacatcaagg	gcagggagaa	acgggattat	tcctgcaggt	ctcaaattggc	tgggcttgac	240
catttgcttg	ctgccgctgt	cctattggcc	gtagtcttca	tattgataac	cogtaactgg	300
gtttgaattt	cttctcccat	cgccattcag	tatgatgtca	gaatgcctaa	aaaacattta	360
ggttcctttt	aggacaatcc	atagtaaagg	ttttgcgttt	ttgttcatat	cttcgtttta	420
gaatcttgcc	ttttgaaaaa	gataacatca	gctattaata	gtatgagcga	taattgtcat	480
ttgactgaga	atcatttcga	agtgttgtcc	tcccgaagga	ttcgcgtctg	actttatttt	540
ccgaatttgt	ctccgaaact	ggtattggat	actcctttct	attgtccttt	cgcgggatgg	600
gggtggtgga	agtataagag	ggccggcatg	gctcccacac	ctattttacg	accgtaatgg	660
c						661

(2) INFORMATION FOR SEQ ID NO:945

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 744 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...744

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:945

```

ggagaattaa tgtgtttttg ggctactttg ttagtcgggt tagcaagant gnnnattttt      60
gccgcatcat tagagtngnt tgccttagac aatcaaacia aagacaacca catttgccta      120
actatttaaa atgggcgaga ttatcagcat agcggagttg tcagccgagt ggaagccgac      180
aagataacgg tatgtggcag cagaaaagtg catgcgccgg ntgtcatgcc gccggctatt      240
gctccctaca gactgcaaag atcgatatat caccgtaatg ggaccgcac ctgaatccgc      300
gaaggtgacg gggttttgct ggaaggtcat agtgccatgg gactcttgct gtcatectct      360
ctttcattgt ccttttgatt ttgttgetgc tttgcttgct ctcaccatca gtattctgag      420
gttggacgag ggcattgagta cttattttct ttgggagctt tgggagtata ctacctgatt      480
ctccggttat caacggcaaa ctgagccgac gtttggtatt tactattcga aaaaataata      540
gtaacaaaca aatatgatac ttactactgt gattgttttg gccgcaatgg tgccatcggt      600
gcaactggtt tgtttttggc cgcaaagaag ttcgaggcaa ggaagacca cgcacgggac      660
tggttgacga ggtactccct caagccactg tgggggatgt ggcttccccg gatgctccgg      720
ttttgccaat gcctggtcaa agcc                                     744

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(2) INFORMATION FOR SEQ ID NO:946

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 671 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...671

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:946

```

tacgcagttg gttttcaccc gtgattcggc acctgccgaa ctatgcgacg cgccgaagac      60
ttgggacgtg agtgggtgat ccgtgccacg ggcaccgtat ggagcgctcc agcaaaaatc      120
cgaatatccc caccggcgat atagagaagc agtcggagaa atggatgtgc tgaaccgctc      180
cgaagtgcog cctttcccat cgaagacgag accgacggag gcgatgacct ccgcatgaaa      240
tatcgtacct cgacctgcgc cgccactgcg tgcgctccaa tatggaactg cgccccggat      300
ggctctggag gtgaggaagt atctcgacgg cgagggattc ctcaagtaga gacccccatg      360
ctgatcaagt ccacgccgga gggtgccgcg gatttgctgt accctctcgg atgaatcccc      420
gccagttcta cgctctcccc cgtcgcctca gacctcaag cagctactga tggtgaagcg      480

```

```

cttcgatcgc attccagat cgtgaagtgc ttccgcgacg aagaccnccg cgcgcaccgc      540
agcctgagtt tacgcagatc gactggcaan atgagctttc gtggagcaga agatgtgctg      600
tccaccttcg aaggatatggc caagcacctc ttccgtacat ccgtcacgtg gagatttcgg      660
aagccttccc c                                                    671

```

(2) INFORMATION FOR SEQ ID NO:947

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 985 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...985

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:947

```

ttccgccggt cctcctgatg gggaacagac gttatcgcac catcgannng natcgctctc      60
gataagcacc acatctacaa tcagcccgac accaagcctc tgcgatggta aagcgtcgca      120
acggcaagga acagagcatg gactattttg cgctactcca tataggccat ggatgcgcca      180
ctcatcaatg attctatggc tgagaactcg ggctgtgccc actgcccact cggatcagaa      240
gaaacacact tacggacgac gctttgggtg cactgtatga agcggactat caatcgagat      300
cattgtaccc gagggagagc tgctgaaaaa acgcgaagag acttctccgc tcacttagcc      360
tatcaggtag ggaaatatgt ggtcttgccct cattcgacgg caatccggcc gagttggcac      420
gtatcgacag caaactgaaa gaatcggaaa cgatagcgat atcattttcg aaaagctctc      480
catggtaggc atgcttcgcc gaaagggtgg gtagaatcca acgcgaagct ctccaaggaa      540
ggcgccattc atttgcaagc tatctcgtaa acaagtaccc catcctaata gtcgattcga      600
atacgattgg aaagggcagg attgggcagg tctgcgtcgg ctgtaaccaa gagcgggctc      660
tcgcaaaagg atgccatact ggagatatcg accaaaagcc ggtcggtgag cgtacagccg      720
cactgcgagc tatcgtggcg ggtctctcta tgccaacatt gctcttgggg actattaccc      780
cccgttcgcc gaagcgagct tacattccat atcgtgggtc aaggatttga gttgacaaag      840
cacgtgaaat tatcaagaca caccctctc gtctgagttt ggagaggttt acgcgctagc      900
gcagagctat ccggaaggga gccacgaacg cacgaaacgt ggacgatagc agagaaaact      960
ttcccgaagc cgatagagcc acagc                                                    985

```

(2) INFORMATION FOR SEQ ID NO:948

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 855 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...855

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:948

tcgtgcggat	tgaggcacac	tttctttttt	atgttataag	cataaaaggtc	gcctgactct	60
tttacgaaag	attttgccag	taacctcttc	ttaacgtcgt	tcgacgtaag	aaaacaccaa	120
tgaatttggt	ttttgattag	ggttaaagcc	caaagaacgt	gggcattatg	cttgaaaaag	180
tagcgaatta	tttgacttta	gcagttgata	atcaataaga	tacgaacgaa	caaaacgcta	240
ctttagaaga	caaatatagt	tgatgttttt	tgcatcatag	atgatttctc	caagtttttg	300
atgaagcaat	caagaaaaag	accctcgaag	aggcagacaa	aaacgcagga	atagaaagtt	360
taagatgtcg	gacagtggag	tcatgaccat	ccgatcctgt	ttcatctgtc	aagataccga	420
gatttgaaag	ctttttatct	taatacatca	cctattcttg	tcgatccgag	ttcccacatc	480
ttgtctotta	aatcgctttg	tggagctgca	aagcaggggtg	ggtttcaagc	tgatagcatt	540
ctcaatatgt	gttgtttggg	tcaatgtaca	ggcatctctt	tcatcgatcc	accccactga	600
aggcttgta	tatcaaacga	gctcatgggc	ataggacatg	aggggatggg	ctcaaaaagg	660
caaaagcacc	atggggttgg	gttttaggat	tcaaactgca	tattggtatc	aacgaccagg	720
ggtgaaatca	tcaaccatca	atcaccaccc	ggcaattgtg	atgaccagag	aaccctctga	780
aagacggaac	cattcaccaa	gaatcttttt	ggcaacttca	ttggccgatt	gagcttccat	840
ttcccaaaac	ctttt					855

(2) INFORMATION FOR SEQ ID NO:949

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 972 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...972

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:949

cgacggnatg	gtggtctcca	tcaaggcgga	catattcttc	cgtaatgctc	cttcgggggt	60
gtcatcctga	ggatggtgca	agagcttgat	ggtaccggga	agacatcgtg	ccccgttttc	120
tcccacatcc	atgtagacta	ccggcaggag	aacttacggc	cgagcttctc	cgtcccattg	180
aagaaagccg	tttctcgccg	aagaaggtag	tccagtatga	gccggcatag	gccggacttt	240
ggtcgcgatg	aagatgacta	gtggagtctc	tgtcgggaata	ggattgcgaa	cgagcggagc	300
agttcacgtg	gcacgtcgtg	cttgngctat	accacgcgaa	ccgatcgctc	ccgtatgcga	360
tgcatgagcc	ggtcggaaga	agtacttttc	aagggcgaaa	gatctgatag	atctgtaggc	420
ccaaatcttt	gatgatggcc	tactgccgga	aaagtactcc	cagttgccga	aatgccccat	480
catcaggaga	tggcaggggtg	cccttcgggt	cgtaagcgga	tcaggacatc	gagattttca	540
atgagatgtg	gcggcggagt	tgcgcctgtg	aataagtcag	aagcttgagg	aactcaagat	600
ttgatacgtg	aaattatagt	aaaatcgacg	ttcgatcggc	gtatttcttg	taaagatttc	660
tcggggaaac	agcgagtcag	attgtccgta	ccacctttct	ccgatagcga	acgacggtat	720
gcagcagccc	tgccagatac	gactctgcaa	ccgcaccatc	catagcggtg	gcactgcctg	780

cataacgtca ggcctaacag caaataatag gaaagggaaa gtgtcgcttt catggaatat	840
ggatcgcggct gtctgcacat attctccgct tggatcgggt ttcccaatac gatctcttcc	900
actttaccaa cccgagtctg cggcataggg accgctcgcg gatgtagtct ncgtaaaacc	960
ctgcatcaga cc	972

(2) INFORMATION FOR SEQ ID NO:950

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 506 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...506

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:950

tacgatatct gcttttttgc gtttggttt cccgtttctt cttgctgcta ggtcgggatg	60
gttatatatt gggtagtcg aggcagatt gtttggttat aggaaatgcc ctttttggtg	120
cttttcacat ggggcacat cgacactata taccgctgca tcgaaagata aaagagtcct	180
cgattccgca gtcgcgatca aggtgatgac ctataacgtc aagggaattcg attttcgtgc	240
tcacattcag agaatcccaa tcctattctc aaatatatca aaggaagtgg agccatatcg	300
tatgcttgca agaggcagta ctgagtcgga aaagcaactc tcgtatgtgg ggctacgtac	360
tttcaagaaa tatcttccc aatatcgcta caggaactgg tcgcatgctc gagaagatag	420
aaaaggcagc ggccttatgc tctgtccaaa tatnccatct cggatgtgca ccgcattcca	480
taccgagtcc cattcatggc ttcaca	506

(2) INFORMATION FOR SEQ ID NO:951

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 373 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...373

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:951

ctgtggtcgt	agagcgaaaa	ctgaatgtgg	gtaaaaacgc	aggtaaagta	tgcagatagc	60
aagaccgacg	gggagacatc	gtgtagactt	tcgctccttt	gcgaacgtgt	atccaagtcc	120
aaccacattc	aaccgtcaag	aagtcgagct	gtattgaact	atgctacaga	gattgccaaa	180
gacattgtat	cgaacgcgac	atcgtggagt	ttggagacct	tggcacacta	atgccttctt	240
tcaaagtaag	gcggtagaac	agggggtaaa	gttcaatgct	aatgttcaca	tcgaaagcct	300
gttgtcttgt	tccaaccttc	caaaaagtac	tttactctca	ccgtgtaagc	tatgaacaga	360
caactgccag	gcc					373

(2) INFORMATION FOR SEQ ID NO:952

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 412 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...412

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:952

tttgggaacc	gatgctccga	acttatctcc	ctaccatcta	ggagtttccg	tacacagcct	60
tottgttgat	cctaattgctc	aagtccctgca	atacacctct	ccatctgtac	ctagtgcact	120
gagcagggct	tcnntgacc	accgntatt	cgtgattccc	tgettgtct	tcttcccgaa	180
ggataagcat	ccttttatcc	aaaagtccaa	gaaagcattc	tcggtaagcg	catgataata	240
accgaactgg	ccatgtgtcg	gtatttctgg	aatagtgaat	ggctcacctt	gcgttgggtg	300
tgaatgtctt	ctaccgaata	gaatacaaat	acggggcaatg	gccgtacctc	ccctcatctg	360
ttgcataccc	ctctagtagc	ccttttggtg	tatcctgatg	ggctcttggt	gt	412

(2) INFORMATION FOR SEQ ID NO:953

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 378 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...378

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:953

aactaagaaa	aaaatggaag	gttcgcgcga	tagtacttcg	aagaaacaga	aaacggggag	60
catgggcatt	cggagagaaa	aaatggccaa	ctcattgcga	tcctcatgct	tgcacgcctc	120
ctatggttgg	caatagaaga	tttggccctt	cgggacaatg	gggaatatct	gccattaccg	180
ggctggcttt	ttgggcatcc	tacggaagcg	cagactactg	ccaagaaaga	tcgatcagcg	240
gttgcacac	ttctctttcc	ccttcgggta	cgaatccgcg	cattcgagtt	gagatgatgc	300
gtggcagagc	gactccacct	gcagacccat	acatacatat	atgcaaaaact	gcggagatgg	360
atatacgggc	caattttct					378

(2) INFORMATION FOR SEQ ID NO:954

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 348 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...348

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:954

ttcccagttt	gccactgcag	aacgcagcag	cttntctaca	cgtgccgaac	ttctttgtta	60
gagaacttca	gcacacccaa	ggcgcgattc	acttccatcc	acgaatcata	tcgggccacc	120
aatctcatct	tgcggggaga	agtaggccgt	tacgaagctt	ggcaaagtac	atctgcttga	180
gggcttcctt	tcttgctcgg	ctgaattatg	ttttcttgca	cccattgttc	ttaatacttt	240
taattttcag	attcctgaag	tgtttgtatt	caaccgaatt	acttcttctt	gttacggcat	300
gaccacggaa	agtaccgtgt	aggagagaac	tcccctaact	tatcccac		348

(2) INFORMATION FOR SEQ ID NO:955

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 440 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature

(B) LOCATION 1...440

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:955

ccgtttttagc	tctttttttcc	gaaaatataa	gtngctataa	atgagagcat	aaaattaage	60
acgccattca	tgtaattggg	gtgcagatac	gatacgaagg	cttggaataa	aaaaaacat	120
tcgggggacc	agccccaac	aggttttcat	ttttcattct	ttcgctttca	gcttcagtgc	180
caatcgaccg	gctccgataa	acagctgccc	acaggaacag	tgtcgatatg	gatgcaatcc	240
gtaattgtga	ataaccggca	agccttgccg	atggagtgtg	cacagataga	tattcncatg	300
tgccgggatg	aggaatccgg	tgtaaaattt	atatttttgc	gcgatattaa	gaactaagca	360
agtgttacat	ggataaagtg	agctatgctc	tggggattgg	agcattcggg	taaataattt	420
caaggctctc	gggcacnca					440

(2) INFORMATION FOR SEQ ID NO:956

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 431 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...431

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:956

gcctccgaag	tncaagggtgc	ctaccggcgg	ttctaccctg	atcaagtacg	gctatgggtat	60
cattccgaag	ctatgtatgt	gaataagttc	tatatcatat	atatgactat	tccaaagacg	120
cttggggagca	gggggtattta	ttggccatga	gttcaactca	cctcttcact	acgtggaaga	180
atacactttc	gatttgctca	atggaagggg	aaagacatca	agggtggcttt	cgtgaaaaac	240
ggtactatca	aatggctatg	gatgacatca	gaatcctgaa	ctaccaaagc	ctgcagangt	300
anaacaagaa	ngtattcgga	tttatcccaa	tccgactacg	gatggctgat	gctggacaat	360
gtgggtgatg	ttaagcgcca	ttcgtattat	antatgtttg	gcangccgct	tgtggtggtc	420
cgcaatgccg	g					431

(2) INFORMATION FOR SEQ ID NO:957

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 311 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...311

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:957

```

nctcgccggc gngatccgat cgtgtcggta tcgcgccgaa gaagtgggtca tgcgggtttc      60
gacctccact tggggcaggg gggcaatacg cacgaagagc ccagacggac tcctctgcca      120
tagaaaaaag ctgacgaata gtggtgagcg gattgtgcac cgcttcatag agccggtcgg      180
caaaggaatc cgtatcaatg ccacggcgct catactgcat acgcggaagc aatttccttc      240
cgctaaatcg gcacgcaaaag caaagctctt gcctccgctc ggaagcctgc cattctgcag      300
ctctctntca a                                     311

```

(2) INFORMATION FOR SEQ ID NO:958

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 639 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...639

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:958

```

ttcaaggtgt tggaggatgg tgcagccaca ctgtcgaaag aggaatccga cgcttggcac      60
agcgactgat gaagtttatc caaaacttgc aagctgcttg atacgtatcg agaataagac      120
ttacggcggtt tgccgcgaaa cgggcaactt attcccaaag aacgacttcg cgccgtacct      180
catgctacgc tgagcaagag gccaaaatga acgagaagaa atagtagatg gcttcttttc      240
tctccgtctg cctcagggaa aagtagtcgc agctctcatt gtcttgcttc tgggtgtagat      300
caggtgatca agatatgggt gaagacgact atggtactgg ggcgtcgcac gttgtcgccc      360
cttggtttca gatccatttc gtggaaaatc ccggatggct ttcggtatag aattagggag      420
caaactcttc ttgagtctct tcgcatcggt gccatgggct tttgtatcta tttattggcc      480
aaattggtac aaagcgagag catacactcg cctttctctc ttgtttgtct ctgatcattc      540
cggcggtatc gggaatatta tcgattctat tttctatggg gtcattcttc cggcagtcac      600
ggacagattg cacaactatt tccttcagga ggtggcggg                                     639

```

(2) INFORMATION FOR SEQ ID NO:959

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 476 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...476

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:959

gctcattttt	acctttcttc	gtttgaaatg	aaaacgactc	cgtttgcaga	cgagctccat	60
aaatagatgt	tgcagaagca	tctttcaaaa	cggacataat	tcaaaatcat	tcggattcat	120
cgtagccaca	acatccaaag	aagtttgata	ccatccacga	tatacaatgg	tgcagagctt	180
gcccccaacg	accctgacca	tggatctcca	cagaagcgac	ggcagtaggg	tcaccggatg	240
tagtctaacc	tgcataccgg	ctacctgacc	ttggagggca	tccatgatat	tggcacgggc	300
ttttccgcga	gcttttcgct	ggacactttg	gccacagaac	cggaacagtg	ctgagtttct	360
gtcccgtacc	gtaacccaat	acaactacct	gcccagaacc	ttagagtccg	gatccagtac	420
gatcttccat	ccacatttag	caatggcgaa	ctcctttggt	aatcataccc	gggaaa	476

(2) INFORMATION FOR SEQ ID NO:960

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 934 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...934

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:960

ttgggaaaac	tcaatttgca	aggggaaaga	aaccccgccg	gnagcctaac	tttttggatg	60
gaggcttact	aaagcgaaaa	acgctctaaa	gcgacctatt	actggaatta	cttgctggtt	120
ttatccctac	tctgaggttt	atcggaacga	atgaatctag	acatatacct	tcgggtgttg	180
taagtttttg	ttcgtactcc	aagattatct	ctctcggtta	tgcgttattg	gctaactttg	240
gagcgggtat	aatacaatta	ctacaagtga	agatttagaa	gagaccaacc	agcagcattg	300
tcctgataaa	gagagtgttt	atcacatacc	ggtgatgctc	ggcagtgttt	ggaaggattg	360
cgtattgatc	ctgacgggtg	ctatgtcgat	gtacgttcgg	cggcggcgga	cattcccggg	420
ctatcgtgga	aaaattaagc	tcaaaggacg	gctgtacggg	ttcgaccaag	atgccgatgc	480
ttgtcgaaac	ttctccaaga	tgagcgcttc	acctttgtaa	cttccaactt	ccgctacctg	540
ccaacttcac	ggattattac	ggagaggatg	gagtcgacgg	catattggag	accttgggtg	600
atcgtcacat	catttcgacg	aagaggagcg	cggattcggt	tccgttcgga	aagtcctctt	660
ttggacatga	gaatgaacgc	tcgtgcggcc	gcaatgcagc	tgccatcttg	aacgaatacg	720
atgcctcgtc	cctgtcgccc	tcttctatca	ctatggggaa	ctgaaacagg	cacgtcggtt	780
tgctcatcca	ttgtccacta	cagggagtct	ctttccggcg	gactgcaaac	tgtgggcaac	840
ttctcgaagc	cgtgcgcggg	ctcatctctc	cgcgagaaga	aagaacagtt	ggcctgcacg	900
tttcaagcct	tgcgccatcg	aggtaaacca	tagt			934

(2) INFORMATION FOR SEQ ID NO:961

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 378 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...378

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:961

```

ccgaacatct catcacacnc aataggggaag acctcagtgg catagccatg ccgtagcgat      60
ggagggcatt cgcccgatac tcatcgaagc gcangettgg tcagctcggc catttatgcc      120
aatccgcagc gtccggccac gggcttcata ttccggcgat gaacatgctc ttagccgtac      180
tgagaaaacg tgccggttca agctcataca gaangatgtg tttctgaaca ttgccggagg      240
tatcaaatag ccgatccggc tacggatctg gccgttatct cggcagtgct ggcgccagtc      300
tgacatcgt tatcccgccg gccgtatgca tgacgggcga agtggtactt ccggananat      360
acgtcccggt agccgcat

```

(2) INFORMATION FOR SEQ ID NO:962

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 381 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...381

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:962

```

gattagtttt tgtttcattc gaatgaggta gtttttgtat ttggagacaa tagttacgga      60
gccaaagcggg gaacagacca ggaagcatcg ggccggagtc gtacaggaag cgatcgtgca      120
agcggctttc ggcgcccttg caaaatttat tcgtaccggc ttacaggcaa agccacccca      180
agtgtcagga cgtggccagt ccgaccggca tatttgagcg actccttcac gaattcctgt      240
acgataaaga acgccccggt ataggacgac tctgtggcga aatgcgcgcc cctaccgact      300

```

tttgtaacgga cgtgttagca aaataagcat ccgctaagct ccgctcctaa aatacgttac 360
atccccctcc cacatgttat c 381

(2) INFORMATION FOR SEQ ID NO:963

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 470 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...470

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:963

ggccactgtc	gtgaaatctg	ttcctccggt	cgggtgctat	gggctttatt	totccattgt	60
cgggtgtgatc	atctttacgg	gccttaccgc	tttcgatgga	acaaaatcaa	gcagatgctg	120
gtcctaaacgc	aaggattcga	agagggaatg	tagttcgcaa	agtagccctg	atgggagcct	180
tgacgctcta	tctggattca	tcaatctttt	cctctatctg	cttcgcttct	tcggccgaag	240
ggactaatcc	ctcccattga	aaagacaaag	acaataataa	aaatccctgc	caactggatc	300
gttggcaggg	atctttcatt	gaaacaccgt	tagtcnatag	atctcntaca	actacattga	360
cgatcctccc	ggggactaca	atgacttttt	tcgactcttg	ccttccancc	aacgggctgc	420
ttccgggaac	aataaggctg	ctgctctaca	tcttctttgc	tcatatcggg		470

(2) INFORMATION FOR SEQ ID NO:964

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 362 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...362

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:964

tgggttaagc	gtacatatat	acaaaggtag	cacagttttt	aattaacttg	cgtaatagcg	60
tctgtaaaac	agattggcta	aagatgttat	ttgagtcttc	ttgtagatc	gaaaaaagat	120

```

atgaaacaga cttttcgctt tatcaaaca ttgaacggat tactcacctg aagccgaatg 180
ctacgatgat gttgttttgg cttcggtggt ggcagtcato atggctaata gttcgttgag 240
tactactatc atgaaatttt agagtacct atcaatctta cgatcggagg tcataggtct 300
tttctcatca tggagagacc atgaccttgc tccagtttgt gaagatgtgc tgatggtcac 360
tt

```

(2) INFORMATION FOR SEQ ID NO:965

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 946 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...946

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:965

```

acaaaacaaa gacgaagcag ctatatgtct aacgaacgct ataacctgcc ggagtgtcgg 60
cctcgaaaga ggatgtgcat gcgccatca agaattgtgac aagggtatatt tccctcaggc 120
attctgcaag attattccgg atattctggg ggcgatcctg actattgcaa tatcatgcat 180
gccgacgggg cgggcacaaa agctcgcttg catacgttta ctggcgcgag acgggagacc 240
tctctatagg aaaggaattg cacaggatgc gctgatcatg aatatagacg atctctgtgc 300
gtcggtgccg tggataatat acttgtgtcc tcgaccatcg gccgaacaaa cggtgatac 360
cgggcgaagt ggtatcggct attatcaacg gccggaagaa ctctggccg atctgcgtcg 420
catgggtgtg aatgcctatg cacgggggggt gaaacggctg atgtgggoga tctcgtcagg 480
actatcatcg ggacagtacg gtgacttgcc ggatgaagcg atcggatgtg atagacaatc 540
ccgtatcaag gccggcgacg ttatcgtcgg gttagcctca ttcggacagc tttctaccga 600
gggaacagtc caaccggcgg tatggggagc aacggacgac ctctgctcgc cacgacgttt 660
ttgcccacta tctggcagag aagtatcgga gagtttcgat cctcgggtgc cggacgattt 720
ggtctatagc ggcagatgaa gctgaccgat gccatagccg gattggggct ggacgcaggc 780
aagccgtgct ctgcgccaca cgtacctacg cccctgtggt caaggccata ctgacgaaat 840
gagtcgtcgc attcatggca tggtaactg cttcggcggt gccagaccaa ggtgatgcac 900
ttcgtcaaga ataaagcgcg tggtaagga cacttcttcc gacacc 946

```

(2) INFORMATION FOR SEQ ID NO:966

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 992 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:966

```

gattatgatg aagagacttg ggggaaatgg tgtgcacagg cccgatgccgc acactggcag      60
gagctttgtc tttcttcttc catgcagcga acaaggggtc gaggtctttt acgtcaccaa      120
ccgcagagac aatntgcgcg aagcaacntt cagaaccttc agcgttacgg attccccctt      180
gccgatgaag aacattgctt acgacccatg ggccatccga caaagaacct cgtcgggtca      240
aaataaagaa cagtatgaaa tagtattgct cataggagac aacttggggc acttcaccac      300
ttcttcaata cgaaagaaga gtccggacgc aaacaggctc tggcctgaca gccggggagt      360
ttggccggca cttcatcatg ctgcccaatc ccactacgga tcttgggaac cggcatggta      420
cggcgggaag tatccgccac tcccgaaaga gacaaagcac ttaaacaact gcactcacag      480
aacagcagat gctccttaag caaacacatc gaatagacag actcacacta tggacaacaa      540
cgactaagca aaatagaaaag actgctccag aaagaactca gcgagatata ctgcgggatg      600
cgaaatccct gccggggcgt atagtctcgg taacgaagta cgtgtaagtc ccgacctcag      660
catcgcacgt atacacctga gtatatocca tccgagaaga gcagcgagat tcttgagagc      720
atcaaacaca atacaagacg atccgttatg acctcgggca gcaagtctgt acccaactgc      780
gcaaataccg gatttgacat tctacataga tgactctctg gattatctgg agatatagac      840
cgtttgcctc atcaataaga aacggctcgt ctctatcaag acctgtgaac ttcccccttt      900
tcatagcccg ccgttacttg ttctcccgca aagattcagt gcgggtcaatg tggtttcgct      960
cgtttcagcg atagctgtct cgtggtctct tc

```

(2) INFORMATION FOR SEQ ID NO:967

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 441 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...441

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:967

```

gcggccggac ctctgtgtag ttcttacaat ataaacgnct taagagaaaa atcagaatga      60
tgaacaaaac gaaatccaat cgtgcggccg gagccaggat cttgtcgcac tcccgttggc      120
tgcccttatg cttctgagcg gtaaagtctg tgggcccggca atgccgtatc cgaagtccgg      180
gaagtagtag caaccgtgcg agcgatcccc ccccttctgc tgatgctcct gacatctccc      240
tgcagaggac gaggatcctg tgtgttccga gctagatact ccaccatctt tcccggggga      300
atgtccgaac tgatgcactt tctgagcaag aatttaaagt atcggaacaa tctgcaaaga      360
acagcatcca agtcgagttg tggctctcgt ttttgtcgaa aaagacggca gactgactaa      420
catacaagtg gaaaaaagcg t

```

(2) INFORMATION FOR SEQ ID NO:968

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 420 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...420

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:968

```

gctacagaca ccgtgtcagc aagctgatgt ttctcggcag cacctgtatt acccgcgcca      60
tgcccgtcag ccgatgcgtg aggaagaatt gctgacagtc cgctggaata taccaacgag      120
ccatacgcca tagccaaaat cgcaggatga agatgtgcga gagcttcaac ctccaatacg      180
gcaccaatta tatagcgtga tgccgaccaa cctgtacggg cccaacgaca atttcgattt      240
ggagcaagcc atgtgcttcc ggccatgata aggaagattt acttggcgca tcgctgcttc      300
gccacgatga ggaaagccgt tccgcacgga tttgtccata cgtctgtoga aagcatcgac      360
ngatcttctt ctttcaatga tattctctca ttctgaagcg gtaacgcata accgccgaaa
420

```

(2) INFORMATION FOR SEQ ID NO:969

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 388 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...388

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:969

```

taatgccctt gtagacaaca gttcgcccaa atatccggc acggtgacat ggccggttgt      60
gccgacggtg gacaggcagc cgaacagttc gatgtcaatt gctacacagg cacatgcccc      120
atgcagccac ccatagcgaa gcacaggttt cgacacgcag ctcaatagca ggctcaattt      180
ccgcaacttc taccaggcga atgcaactat gtagctcgct cagtggctga agccatcgcc      240
gccagccggg caatacgccg atgaatccat tctttatata tggagcttcc ggtggggcaa      300
gacgcacttg tgccatgcct tgggccttcg tgtcagagag atgacccccg gttgaaagtt      360
actatacggt atcgagtcac ttgttcga
388

```

(2) INFORMATION FOR SEQ ID NO:970

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 416 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...416

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:970

```

ggacttcgaa cgagattatg accgcatggt cttttcttca ccttttcgcg actgcaaaac      60
aaggcacagg tattccccct tgcaggcaat atattcgtea caatcgcttt acgcacagtc      120
tcgaagttag ctgtgtggga cgctcgccgg caataatata acacgcggac tgaaagcgcg      180
gtatggcgaa ttgccaggga gtcggggggcc atcagtgeca tcgtgtcggc tgctgtctg      240
gtcagacat  gggcaatcct cttttcggtc acagcggcga gcgtgccatt tcggttattt      300
ccgcgaagga aagggtaggg tatgggagga cgcagtcgcg aagaaggang tcgctgggaa      360
gacttcctgc acttcgaagg caatgcaaac gcttcogtct gctgacgcat ccagtt         416

```

(2) INFORMATION FOR SEQ ID NO:971

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1553 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1553

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:971

```

atcacgggtt gaaaaccaac tgcgtagtac cgtaacgggtg gcgcagatca caaaggatcat      60
gccgcccatt cggcgcacgc gctgtaccca accgcagagt aacggtttgt tgcagatgag      120
aaaggcgcaa ctgccacag gtatttgtct gtacataatg ataaggggtt-cttctattta      180
tgatcgattt tgtggacaaa agtacgaaac aaagcggact tttcctccta aaacactcga      240
tgctggtggg ggtaataccc taaaagcaaa ggccttgcac atttgcgga agtctatgaa      300

```

gaaaacaggt	ctttgacccg	attgggactt	tacggagatt	acgagtgtaa	gagactctgt	360
gatttgactg	catgcagtct	gtttccatca	tcgacggctc	tgccgtcgta	tagcagttct	420
cagaccaaaa	acgcatgggg	ctggggcgag	aaaacgtggc	gcgggatttt	tttcgttttg	480
gttcgggaat	aaaaatttct	cgcgcgtaaa	cgaagtaatt	tacgcgccta	aatctcgcaa	540
atacgcgccg	caattccatc	gattgcagtg	cgtaaaattc	agtaagagga	aggtgaggag	600
cacgaactcc	ctcgtttaag	ataatgggtc	tgtgttcata	cgtacatcat	cgtacagacc	660
gctgtctatg	aaagatcgga	gtatacggca	cctccctcca	ctaacagcga	ctgtatgccg	720
cgagcgtgca	gttcgccagc	atctgctcca	cgggagggcg	ggagggatcg	atccgaacga	780
aagaacacgc	gagggatagc	cggaggggtg	ttctttttcg	gtaaagacca	gtggggcaca	840
ctgccatcga	agaggggtgag	gtggcggtgg	agagccagat	gggatctgtg	accacacgta	900
gcggatttcg	gccgtaccaa	tgccgaaccg	tagagaggga	ttgtccaaaa	gagcggtagc	960
gaacccccacc	aatatggcat	gtgtatcatt	cgtctatggg	gcacaaagcg	tgtggtcaga	1020
ggtgtactcg	cctgacagga	ggggtggagg	catngtcgng	cagtgcgtca	atgaatcctc	1080
gctactctct	gcccatttga	gtgtgacata	gggacgggtg	tgccgttggc	tgtgaggaaa	1140
tgccgattca	gctcctcggc	ttcctctgca	agtagtccac	ttggaccgat	acgcctgcgt	1200
cacgcaacat	cttgatgcct	cttccgaaac	ggatgggaaa	ggatcgagca	tggccaccac	1260
ttcatgaggg	atgcctcccc	aaggatcagc	tcggcacagg	gaggcgtttt	gccataatga	1320
gagaaggctc	cagactgaca	tagagggtag	tttctctgag	caaagccctg	tccgcacaga	1380
gtttatggcg	atgacttcgg	catggggcat	gccggcacag	tgtggtagcc	ctcaccgatg	1440
atacgcccat	gagccacaag	gactgctccg	caagcggatt	gggagagggtg	aacccttcgg	1500
cattctgtgc	taattcgatg	cacggcgcat	atacagagga	tcgggagtca	tac	1553

(2) INFORMATION FOR SEQ ID NO:972

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 436 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...436

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:972

aacaactaat	gtctcacaaa	ttaatttaag	aacagagatg	aaaaaactgt	tttagcgact	60
ttgggactta	tggccattgc	catgctctca	tgttcaagaa	caacaaggat	ttggagaaca	120
aaggggaggc	tactcttttg	gtaacgttgg	tagctcctat	aaagctccac	gcgaaacctt	180
tgcaagatt	gagaagcttt	tgccgcagct	tatcccgatc	aaaggataag	ctggacatac	240
acgtctctat	tatccgaaag	aaactgggtc	agcagggtat	ttatatcgat	gctcggatga	300
ggctttggag	aaattggctc	gtctgggtta	taagaagatc	aatttacaga	gtcttcatgt	360
gattcccggc	cgagaatatg	atgagatgat	cgctttgttc	aataatttta	aggcagcaca	420
tagtgatatt	actgtg					436

(2) INFORMATION FOR SEQ ID NO:973

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 385 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double

- (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
(A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION 1...385
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:973

cagctcctcc	togaagattg	ataccgaggn	aatttcctca	gaagagcaga	agacatagta	60
ctgtagtata	tccgtcaact	ggcgggacat	acacagcagg	caaagacaaa	gccgatgagg	120
ctaagtgtcc	aaagccgaat	ggaatcgcg	catagactgc	cgacggatgg	gcagggcatg	180
aggtcccaa	ccaacggaac	gtgcatacag	atagacttta	taaacaaaagt	gtcctacgat	240
aagtgcagg	cgatacccg	gataatatcg	gtgatgaaat	gcactccgat	ataatacggc	300
tatagatgac	gagtgcgacg	acgctccaga	tcgtccacgt	gttgaattta	ttccgaaaaa	360
tacngctccg	taaataatgc	cagcgc				385

(2) INFORMATION FOR SEQ ID NO:974

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 696 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
(A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION 1...696
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:974

cggcgcant	ntggttcgtg	tttccatgac	agcaggctat	agacattggg	cgatcggatc	60
gatgtcggg	cgttatggct	gcatgtctta	tttctttatt	ttgtggggag	cgcaggcaaa	120
cactattcgc	ccgccatctc	cattcttcaa	taccttcatt	tgttttcagt	aaaatgaatc	180
gagcacgaat	catcgtgccg	gcatcggtec	gggaggagca	tcggatatta	ctcctgcagt	240
gctatggcta	tcggccggtc	cgacgtagtc	gtcggctata	aatactatct	cogtttatcg	300
aaccttatct	ccgtccggat	acccactgcg	tggataccgg	cataagaagg	agcggcagcg	360
tgccgaggaa	gcattcgggt	atgccctcag	cgcaagacgg	tctgcgtgat	cagctccggc	420
gatgccggca	tctacgggat	gctcctctta	tatatgaaat	gaaacgagcc	aaaggcgtgg	480
agatggacat	gaagtgcctg	ccggtatcag	tgcttttcag	aaagcggcct	cgtcgtcgtg	540
gctcccatcg	gtcacgacct	ctgcctgata	tcgctgagcg	atctgatgcc	ccttgccgga	600
tcacgaaaa	gcgcatagtg	gcagcagcct	ncgcggattc	gtcacagcta	tatacaatcc	660
taagagcgag	gcccgatact	ggcagcctat	cgnttc			696

(2) INFORMATION FOR SEQ ID NO:975

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 569 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...569

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:975

```

cgcaactctt cegtattgtt cgtataataa aggtgtacgc gagggatcgg ttccaaaacg      60
ttgaaagtcc gtatagtctg ataagtatcg cagcaggata cagccacatt caccggtccc      120
tgtccggcag cactactgctt gaccgacgtg ctacggagtc ttctctctcg atatgaatat      180
ccttatagta aggaatactc ccacaacggg aataccgcac aattcctcaa ggatcttttt      240
cccttgctga aaaggcgaag atcgccccga aacttattga tcatgatgcc tcgtcatact      300
ttcgctcttc ggcagagagc aacatgatag aaccgtagac cgagcaaaca cgcctccacg      360
gtcgatgtcg gccacaagga tcacgcatgc actgcatgga tggccatcgg catattgact      420
atatcggtat cgcgcagatt cattcggata tactgcccgc tccttccatt acaacggggc      480
cgaaacgaga gccaaagcggg cgaaagcggc gtacacctcc gtacgcagtt cgtccctccc      540
tctcgtcgaa agtattcgta agcatcccg                                     569

```

(2) INFORMATION FOR SEQ ID NO:976

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1498 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1498

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:976

```

ctattgacat aaaaattgcg gagctacata agaggcttcc annnnngnacg gcaaacaatc      60
aactaacaat aacaaaccaa gcaacaatga acatcaaaca ttggcagacc gcgtacttgt      120
aaagccggct gcagcagaag aaaaaacgtg agcgggatca ttattccgga ttcggccaaa      180

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gagaaacctc	tcaaggtgaa	gtaatcgctg	tcgggaacgg	cacgaaagac	gaagagatgg	240
tgctcaagca	ggagacaccg	tactctacgg	caaatatgcc	ggcactgaaa	tagactggag	300
ggtgaaaaat	atatcatcat	gcgccaaaac	gatgtcttgg	caacatctaa	tgggcaaaac	360
aaaaaaatca	gaacaagtta	acactgcagg	ttgccttcaa	aaacaggaaa	ccccagtgg	420
aaagggaagag	acaataatcc	tcaaaaaaga	aaaaaaataa	ataataaata	ataaagacta	480
tggcaaaaaga	atcaaattcg	atatggaatc	tcgcgacctt	ctgaagaagg	gcgtagatga	540
ctggcaaatg	ccgttaaagt	taccctcggg	ccgaaaggtc	gtaatgtttc	cttagcaaga	600
cgtacggagc	tccgcacatt	accaaggacg	gtgtgaggta	gcgaaagaga	tagaattgga	660
gtgcccggtt	gagaacatgg	gtgcccggtt	gtgaaagaag	tagcctccaa	gaccaatgac	720
gatgccgggtg	acggtcgact	acggctacga	tcctcgccca	gagcattatc	ggcgtgggtc	780
tgaaaacggt	acggcaggag	ccaatccgat	ggatttgaag	cgtgggtatcg	acaggctgta	840
aaggctgtgg	taactcacat	tgcaggatat	gctaaggaag	tggcgacgac	ttccagaaga	900
tcgagcacgt	agccaagatc	tctgccaacg	ggacgaaaac	atcggtagcc	tcattgccga	960
agccatgcgc	aaggtgaaga	agaaggcggt	atcacggtag	aagaagccaa	gggaaccgac	1020
actacggtaa	agtgggtgaa	ggtagtcagt	tcgaccgagg	ctacatctct	ccctacttgt	1080
aacgaacacg	gataagatgg	aggtgcaa	ggaaaatcct	ttcatcccat	ctacgacaag	1140
aaaatatccg	tcctgaaaga	gatgtcccg	atcctcaaca	aacggttcag	acgggcaagc	1200
ccctcctcat	cattgcagaa	gacatgacag	cgaagcactc	gccaccttgg	ttgtaaaccg	1260
tctgcgcggc	agcccaagat	ctgtgcagtg	aaggctcccg	gattcggcga	tcgtcgcaag	1320
gcttgctcga	agacattgct	atcctgacgg	gcggaacggg	tatcagcgaa	gaaccggtct	1380
gaagctcgaa	aatgctacga	tggatatgct	cggtacagct	ggaaagtaac	ggttgataag	1440
gacaatacta	ctatcgtaa	cggagccgga	acaagaagg	catcgcttca	cgtatcac	1498

(2) INFORMATION FOR SEQ ID NO:977

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 474 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...474

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:977

atttattccg	aagtaaggac	ggaacaagta	accgttcaag	aagaacagaa	gagtaaagcg	60
gtcggcagat	ttgtccaccg	ctactttctt	tcatgagcgg	ggaaatggcg	aaaaagaaag	120
gagcaaagaa	atccgataaa	aagcattcgt	tatttttggc	agtgagcaga	tattctttgt	180
ggaaaatccc	cctaaatcta	tgccccatat	agcaatttac	agtagctttc	tgaacttcat	240
ctccgcaacc	tggtgatttc	atcctttag	gtctcaagat	ggtggaggat	gatgtttcca	300
catagatgcc	gatggtcata	tcctattcc	tcatagacat	gacatctccg	ccaatgtatc	360
ctgtaactct	ttggcaatat	agatgggtct	gcatttttca	aagtattgcg	acagatgaaa	420
agcgactcat	aatcgctttt	gcggattttc	gcctttctct	tcttgaaact	ctng	474

(2) INFORMATION FOR SEQ ID NO:978

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 455 base pairs
- (B) TYPE: nucleic acid

(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

- (ii) MOLECULE TYPE: DNA (genomic)
(iii) HYPOTHETICAL: NO
(iv) ANTI-SENSE: UNKNOWN
(vi) ORIGINAL SOURCE:
(A) ORGANISM: PORYPHYROMONAS GINGIVALIS
(ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION 1...455

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:978

gggattggac ttcaatcctt cctgctggtg gattgcttga tagagacaag tggatgttgt	60
taccggttat cgggtaacat cccagaatgc tcatagagag atacgcaagt cggtagggag	120
tggttcttct acaactctac cgccaattgt caccgatatg ggatgaagcc aatccgttaa	180
cttgtctcat acttgtcccg agatatacat catgggtact tttgttgtaa acggtaccga	240
tccactgtca tttcacaatg tactccaaca gatctgggac gcgttgctaa ccacacgccc	300
gtcgtttcgg ctctggtgca tttgaatatg ccaatgaata tcgcctggtg ttaaagatta	360
gaaatatcta tctgaaagta ccgaaatcct accgctgaaa taggntggaa ttatagcaat	420
cacccgtaac catagttccg taggttaciaa ccatg	455

(2) INFORMATION FOR SEQ ID NO:979

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 456 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular
(ii) MOLECULE TYPE: DNA (genomic)
(iii) HYPOTHETICAL: NO
(iv) ANTI-SENSE: UNKNOWN
(vi) ORIGINAL SOURCE:
(A) ORGANISM: PORYPHYROMONAS GINGIVALIS
(ix) FEATURE:
(A) NAME/KEY: misc_feature
(B) LOCATION 1...456

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:979

tcgaaccttg agtattagtc ttggcactga ccacatcgtc gaattgtang cagcaccgga	60
tgcaagcaga ctatccaatc ggggggtatt ctccagagat aaccatagct atgcatataa	120
tcaggctcggg ctgactcacc cagaacggca ctaccgtgtg tggcgcctta ggggagactt	180
tggtaacat atctcttttg tactggagtt aatgcgatcg aaaaggcat tgatctcttt	240
gccttcatca agctttgcca gatgctccat accaacctct cacaagggtc agcttcggat	300
aggagaaagc atagcctcta tcttcggaga gctgatcaag agcttgggat agtgccaaac	360
tgctgcatag agtattgggc taagaaacag aacagtagag gaaagagaaa tttaggtctg	420
cttgggagta gatgtagtag cgaccgaggg ttagac	456

(2) INFORMATION FOR SEQ ID NO:980

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 478 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...478
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:980

cggccgaagc ccagaccgat caatgtctgt tcgatcgcag catgatagtg ccoctgctgca	60
tgagagagag ggtctcgctc atattcgtat aatgctcttc agtcggatat agtcacccga	120
ttcgtagtcc gtacgtccgg ccatttctcg gacagacgcc gtatctcttc ctctatttgg	180
cgaatatcgt tgaaagctgc tcgacctctt cgtaaaccgt gtgtccgtcc tgcaaaccga	240
tcaccgcggc agatagccta tgcggatccc cttggggcgt gctatgtgtc cggagtcggt	300
tcttccatgc cggcaatcag cttgagcagc gtactcttgc cggaccgttc ttcctacaa	360
gagcgatacg gtcgcgcctg ttgatgacga atatacctga tcgaagagca gacgggtgcc	420
gaaatcgaca gtcaggttat tacggagatc atgacttcgt gctcattcgn ttgatgat	478

(2) INFORMATION FOR SEQ ID NO:981

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 928 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...928
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:981

agtctttctac tcatggagag gcaccagcgg aatggactac tatcgatgcg atggcgatgg	60
tcagggtttgg ctctgtctgt cttccggaca attggactgc tgacagctca tggcggcagc	120
aacgtagtaa gctctttctc atggaatgaa tggctttgaa tcctgataac tatctcatct	180
caaaggatgt tacagggcaa cgaaggtaaa gtactactat gcagtcaacg acgggntttc	240
ccgggatcac tatgcggtga tgatctccaa gacgggcacg aacgccggag acttacgggtg	300
tgttttcgaa gaaacgccta acggaataaa taagggcgga gcagattcgg tctttccacg	360
gaagccaatg gcgccaacc tcaaagtgta tgatcgagcg tacggtagat ttgcctgcgg	420

gcacgaagta	tgttgctttc	ctcactacaa	ttgctcggat	ttgaanacat	tcttttggat	480
gatatccagt	caccatgggt	ggcagcccca	ccccgaccga	ttatacntac	acgggtgatg	540
tgatggtacg	aagatcaagg	aaggtttgac	cgaaacgacc	ttcgaagaga	cggcgtagct	600
acggggcaatc	atgagtattg	cgtggaagtg	aagnacaagc	cggcgtatct	ccgaaagagt	660
gcgtaaacgt	aactattaat	ccgacaagtt	caatcctgta	cagaacctga	cggcagaaca	720
agctoctaac	agcatgatgc	aatccttaaa	tggaatgcac	cggcatctaa	gcgtgcggaa	780
gttcgaacga	agacttcgaa	aatggtattc	ctgcctcatg	gaagacgatc	gatcagacgg	840
tgacggcaac	aattggacga	cgacccctcc	tcccggaggc	tctcttttgc	aggtcacaac	900
agtgcgatct	gtgtctcttc	ggcttctt				928

(2) INFORMATION FOR SEQ ID NO:982

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 679 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...679

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:982

gctcatatcg	gcggacagat	acgcacctac	agagaggacg	ggttcgtgtc	gagacagggc	60
cgaataccgg	cacgatctcc	tctccggaag	tggccgagta	ttcgaactgc	tcggattgga	120
acctgagata	gccactcctg	cggcctcaac	cgtctgatat	ggaaaggcaa	caaactgtat	180
ccccttccaa	ggaacacgcc	gaggcagtcg	ctactcctct	cttttccctg	tgggacaaat	240
ggcgttccct	ggcgaacctt	tccgccggag	aggcggacaa	cccaatgaga	cggcggagcc	300
ttggctcgtc	gcccggctgg	caaaaagtth	gtggactacg	cagcgatcct	ttcctcggag	360
gtattttatgc	aggagatccc	gaccaactgg	ttctcgcttt	gccctgcccc	aactatacga	420
tctggagcag	cgatacggca	gttcgtactg	ggcgcggttc	gaaaagcccg	acagccgcaa	480
agcgaacgcg	ccgcaaagcc	tcgcgcaagg	tcttttccgt	acaaggggga	ctcggctctt	540
ggcgaacgct	ttggccgact	acatcggacg	cgaacacatc	ctgacggaac	gcaaataccga	600
tacatcaatc	acccggggagc	acacaccttc	ggccttacta	tacggatgct	tcggaagaag	660
agcacaccat	tccttgccg					679

(2) INFORMATION FOR SEQ ID NO:983

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1425 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1425

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:983

```

ttaatgagtg cccctttgag acatcgaacg accatgaccg gcaacagcat tgtgctcctc      60
caatcatcgc cttgctcccc gtatatgcac ctgtgccagc ttgtgccgtc tgattcacat      120
tgcgctccata cgagccgata ccgcctcggc tccaataatc catccggcca ccatcggcac      180
acagtagcaa ccaatatacc tatgaggaga cctttgcacg gcaattggga tctctaacac      240
attaatcggg cttattccgg acggagcatc atcaggccta tatgtgtgtt aacattcaaa      300
tgcgatcgcc ctgccggatg gacgatattt gggactcgaa tggtagatat tcttatattt      360
gcgaccatat gagaaaatca ctcactatta aaatcaaaaa catagaatga agaaaacgct      420
tttgctcgct gcggtagtgt ttgcagcagt ttcgtcgtac aagctcaaca gaagagtgca      480
gacgtttagt gaatcagttc actactatta aagaagtgcc aattacgccg gtgaaagata      540
ggccaactca ggtacatgct ggtcatactc tgcattagga ttccctgaag cgaaatcctc      600
cgtatgggaa agcccgaagt ggacttggcc gaaatgcctc cgtagctcaa tcatacaagg      660
acaaaggcga gaagtatgta cgtatgatgg gaagctgaac ttcggacagg gcggttcctt      720
ctacgatggt ctctagtggg gaagcactac ggcgtcgttc cacagtctgt catgcagggc      780
ttgactatgg caggaagaag aatgctcaca gtgaattggc cgacggtgct ctgcctacct      840
caaggctatc gtgacgaatc ctaatggcaa gctcactcct gctggaaaaa gcctatgatg      900
ggatcatcga cagctacctc ggcacatgtc cgaaactttc acttatgaag gtaagaccta      960
cagccgaag agctttgtct gtatctcggg cttaatgtcg atgactatgt gtcgctgact     1020
tcttatacga tcattccttt tacacacagt ttgccctcga aatcgaagac aactggcggg     1080
ctctctctcc tataatatgc ccatcaacga gctgatggag actatggata tgccatcaac     1140
aacggctatt ccatcgcatt gggttcggac gtaagcaagt gggctttacg cgtgatggta     1200
tcggcgtatt ggccgacgta gaaggatcga agccaaaggg tcggatcagg atcgttgggt     1260
aggattgagc cgtgcgagaa gcaggcagag atcattcgta cggttaatag tgccgattgt     1320
cctaaatcaa cccactcaa gagttccgtc agaaagggta cgatgagtat agctcaccga     1380
tgaccacggt atggttatct acggtatcgc caagaatcag atgga                        1425

```

(2) INFORMATION FOR SEQ ID NO:984

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 602 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...602

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:984

```

tctcagcgcg ggattgtttc aaccgcagga gcttctcttt ctactgcaga gtotoccatag      60
ctaccgaagt ggccgaatca gccgctgcat cttgagcgaa gcctgagtca tgaagcctac      120
tgacataaag gccacacatg caattgtgca aataactttt tcatcgcgag tcttttgttt      180
agattagtac ttttcgtttc ttttattttg ttccttaata atcttctgcg cggagagagc      240

```

gggatcgaac	ccgcgaaacg	ctttcggcgt	ttacacactt	tccaggcgtg	cctctcaacc	300
actcgagcac	ctctccttgt	cattccatta	aaaactccct	accgtcaact	tgggtgcggc	360
tatagcctta	tgcatacagc	tcataaccac	gattatgggt	gggaggattg	ccgatcaata	420
caacgtctta	accgattca	tcgcaaactc	atgttttttt	catcattcca	tcctatattt	480
ggagcacatt	ttcagttgga	atacttaaat	cggacgaata	atttttccct	cttgaaacta	540
aaaccgaaaa	aacggcatgc	atttcgggcc	gttttttcag	ccaaaatacc	ggatccagtc	600
ca						602

(2) INFORMATION FOR SEQ ID NO:985

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 490 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...490
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:985

ctatgtcccg	atccacttgg	gattcgatgt	gccggctcag	tgtctacgcat	catctatgca	60
aactccttgg	gcgctatcca	gctctacgag	gacctgtg	ccggatgtat	cgccacctcc	120
acgaggaaag	tctccccggg	ggacaaaaat	ccgaaacgat	ccgaacgatt	tggtctctgt	180
ctatcatctc	gctctgactt	attggacatt	gggataaaca	aaaaggagga	accttgatcg	240
ggtcgctcct	ccatccatcc	gtaacagctg	caaaggtaat	cttttttact	atgggcata	300
aacttgccct	cgctgcacat	cccacaaata	tgtgcaacac	aatgtaattt	tataatttta	360
gcaagangca	ctcgaacgga	gttctgaatc	cggtttcttt	ctggctatgg	cttcagtttg	420
ttctgtataa	tggagatctg	ttggtcgtta	tatcgatgaa	agattacatt	gaggcatacc	480
tattatacat						490

(2) INFORMATION FOR SEQ ID NO:986

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 409 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature

(B) LOCATION 1...409

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:986

aacatttacc	tcaactgcaa	cagtggattg	ttctgtctat	atatggagga	tactaatatt	60
tctcacaaca	ttagaaaattg	caaaaactta	taacctcgaa	tactaacc	taaaagagta	120
aaaagatgaa	aaagttatcg	ttacagatat	tggactat	ttcgctgctg	ctgttctgat	180
ggtatttctg	acaggggcca	aaaccgggtt	gacttggagg	acattccgca	agaagcggaa	240
atccgacacg	ctcgccata	ggcgagacgg	ataacggcag	agaatacctg	ggcctaattt	300
ttacctgaca	agttcggatg	aagtgggttc	ggacagtcga	tccgagcaga	aaggaaaatg	360
ctggcccgtg	catttaacat	tcagaccggt	cttgggagca	attgcttag		409

(2) INFORMATION FOR SEQ ID NO:987

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 554 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...554

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:987

cgttgttg	gcaagagcac	gtgatgctta	tgctaaagga	gatacaattt	ttttaacagc	60
aagaattaca	cactggggaa	tgaacgtaat	cttggggagt	agtaaaaaag	atgcctggca	120
tgggaagttt	gaccagacag	gaaatattca	tatcaaggaa	agaaaattgg	aaaggtcttg	180
gttgacgggc	aggatattta	tcctcttctt	ccggtgttgc	catgaatacg	cttcctcctg	240
atthtccaat	tcgatagaat	tgttttcgaa	ttatacggat	ggtgatattg	cccagctttc	300
aaggcataag	aacaattagc	cctcaatctg	aagtccaata	aaaagttgct	ttaagcgggt	360
cttttgaagg	cggangcggc	ctgaaagaca	aattatcagc	aaagcatctt	tgattacagt	420
cttaccaaaa	atatctgcc	gaccatcatt	aacgccaata	atacaggtga	ggctgttttt	480
tcgattcaag	ttatatgtcg	aatatcatag	actttgaatc	gatccgaagt	ggagcttcac	540
gcagacatct	ttaa					554

(2) INFORMATION FOR SEQ ID NO:988

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 421 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...421

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:988

atcttctata	cttgatatta	ttgattacct	cctattgtca	gataatcccc	tatagttgag	60
aatattatta	atgaaaatgt	tgaattctat	ggaatgaaat	atttcttgaa	gaaagaagct	120
acatccta	at	gaggaaggca	cctcattagg	acaaggtagc	caagatgtgt	180
gcaagaggaa	tatccttgcc	atacatacag	actcactctg	tgggtgagat	gagaacaatt	240
ctgacaggat	gttttatgtt	cctcagcatg	aaactaaagt	tggtaatcgg	aagtcaatat	300
gaccttcagg	cattttttgc	catttaatta	tctaacagag	gattttattc	atcagcaaac	360
acttattttg	atacggcatt	ttttattaat	cgagttatga	tggtttcctt	gattatgcat	420
t						421

(2) INFORMATION FOR SEQ ID NO:989

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 571 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...571

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:989

cggatgaaag	cggattgctt	tgtggacttc	agaagtttgg	ttatgatatg	caaggaggaa	60
ggcaagtatt	cccaaaactgc	aggtctataa	caatgcatga	agatgggtga	tagccctttt	120
acctttgaac	aagcgatgct	tgatcgcatg	cctggggggcg	aatcttcgaa	tcaggcattg	180
gagcctacct	cgtcagcagg	cttttgttca	tcgttttcgag	gtattttatt	ggcgcgaacg	240
agacgtgaag	tcgatttcgt	cctgcgcaag	aaaaggttct	gttgttgcca	ttgagtgaag	300
agcaatgcag	agaaaaggac	agacgggctg	gacaaatttt	cccttccttc	aagccccaat	360
cggcttttat	tctcggagat	ggaagggtgc	aggccgaaga	cttcctttcg	atggatatac	420
cgaaagttat	ctggagtgtc	cctgtttttt	tgcgaacagc	acaataaaaa	attgatgcac	480
ttaaaagagg	cctttccgat	agcaatcttc	acctgatacc	ggaatttgtc	tttcgcgatac	540
aggtttacag	aatgagagca	aaaacctaag	a			571

(2) INFORMATION FOR SEQ ID NO:990

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 616 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...616

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:990

cgccaaaccg	gtcataaaga	agaggaagaa	agtgatccag	aagctttgtc	acctttctcc	60
ttgcgcac	ggttgaaaga	aataccgatc	agccccaag	caacggaagc	atgtaggtag	120
acatttgtgt	ccgcgattct	tggtcataag	tccggcatgt	catccgtagg	accgataaga	180
atcttgtcaa	tgaaggaata	cccgtaacgg	cattgccacg	caatagtcct	ccgtcgccct	240
gcaggcattc	tgacggccgg	aaaaattcca	aaggaaataa	cgccagtaca	tatatggacc	300
tgataattga	agaagaat	caggttctct	ccgaatgtag	gcaactggta	tccgtttcgg	360
atcgcccat	ccagatatta	tagctttg	gagtcacatc	gtagtggat	agacacgtgg	420
gaaaagcatc	atggaaccat	ccctaactgt	attcgcggtg	tgtatagagc	gtttcgtaac	480
gacccattatc	gtaggattta	ccttgggcga	agccctgtta	cttctgccat	ccttcaacca	540
caggttggga	tgcaaaggaa	ggcccgtaga	tcacgggtac	ttcgtat	cgcgagcaag	600
gtagctacaa	gccgaa					616

(2) INFORMATION FOR SEQ ID NO:991

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1214 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1214

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:991

cgcattccgt	cggatatgct	catcggcaaa	ctggaatcgc	tcacgcgttg	tacataaccg	60
gacgatcgg	aagagaaata	gcatgaagaa	ggagggtgtc	aataatcatg	gcgcacctcc	120
ttgcattaat	atgggacggt	cgggtaccgg	gctattccga	gactccttaa	ggagtcacct	180
ccgagaccct	taaggatctc	caccaagacc	cctaaggagt	ctccaccgag	atccctaagg	240
agtccacca	agaccctaa	ggggtcccaa	cagagactcc	ttaggggttc	ctcatgcttt	300
acttcaggag	gggttcgtgc	ggtcttataa	tccattcgaa	tgggacatcg	ggagcagtga	360
ccggcgaaag	gaagccgaag	cttagcgaat	ctaccgtcga	acagattgat	gatgcggccg	420
gcactacgtg	catcgtgctc	gagtgcgctc	ccatgacgat	ggttgccact	tcgcgattga	480
gacctctgag	agttccatga	catcggctcc	gtttttggag	tcgagggttac	ccgtgggtta	540
tcggcgagga	tgagcttcgg	attggccacc	acggcncggg	cgatagcccg	cgctgctgtt	600
gtcctccgga	gagctgattg	gggaagtggc	cggcccgtgg	ctgatgctca	tcttgccgag	660

tgccctcctcc	actcgcctctt	tccgctggag	gccttcacac	ccagatagac	gagcggcaac	720
tccacgtttct	cgcttcgcgtc	atctcttcga	tgaggttgaa	gctctggaat	acgaagccga	780
tattccctta	cggacggcag	tctgtctttt	ttcccggagg	ttgcccactt	ctgcccctcg	840
agcttgtaga	taccggaagt	gggattgtcg	agaaggccga	ggtattgagc	agagtggact	900
taccgcatcc	cgaaggcccc	attatggcga	taattcgcct	ttgtccactt	tgagcgatac	960
gccatcgagg	gctaccgtct	tatttcttct	gttctgaaaa	ccttggtgag	gttgctgatt	1020
tcaatcattt	tttacttggt	tttatgaggt	gaaaggaaga	gcgacaagcc	ggacaatgct	1080
ggtctatgaa	tccgccgttt	gccggattgt	cgccgtatit	attcgtacgg	agttcattga	1140
cagggttgcg	gcgagctatg	cgccggagggt	tgatgaaacg	gccaatgcaa	taatcaggag	1200
gacgaacaga	ccta					1214

(2) INFORMATION FOR SEQ ID NO:992

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 523 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...523

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:992

aatttgatc	tgacccatgt	gttgcatctt	ttggggatag	ctcgcacgag	aacttcaaac	60
ccggcacaag	tgtattggat	ttgggtacgg	gtggagggtc	cccgggtattc	caactggcgat	120
tttgttccct	caagtctctt	tctgtctgtg	gacagcatcg	gcaaaaagggt	gaaagtggct	180
tcggccgtag	ctgaagattg	gggcttgaca	atgtgcgcac	tatgcaactgt	cgggcagaaa	240
gcatagtgag	aaattcgact	tcatagtcag	ccgtgcagta	atgaagctga	gcgactggcc	300
aagatctgca	ggaaactcat	ccggcgtgaa	gatcagcnaa	atggctcccc	aacgggctta	360
tctgtctcaa	gggtggcgag	cttcaagcac	gaatactgcc	attccggaac	aaggcnatga	420
cagaggagct	atggccgacc	ttaagaagag	tatttcaaac	ataaaagtgt	ctactacctc	480
tatgacacga	tgaagtaaag	atgtcacctc	aattcgtgca	gaa		523

(2) INFORMATION FOR SEQ ID NO:993

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1514 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...1514

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:993

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gagtacagaa tcccagacct tagtcccttc gtgtccgatt ttcattcagcc gaaggcaacg      60
aaagtcagac atattcagcaa ggcactccac gagccgttct gtccatgaag cctgcataac      120
gcatagccgt ggcccgatcg atacgccatg tttgtggccg ataaagacgg cactctgctc      180
tgccagagcg aaacaaatgc cacggctcca ctgatatgga agaaaagctc caaaccggca      240
ggtctccttc cgagttgaaa tcctccagta gcatgccggg gaaagcagct gcgaaatcag      300
gatccccaac caatagagat agaaacgggg cctcaaccct tgctcttgtc ggatcgagtt      360
ttttcgtgag atgggttcctt catagcttct cgatgacaat attcggttcg atttgtttaa      420
taccaacgcc ttccggtggg ttcatgccct gcgagacgat agccctgcga ctcttataag      480
atcaattcgg cagagagccg aaggaggagg gtgaggcaaa ggcactctcc agcgtgcag      540
tccgaccagc gtacgggcac aattgatcac ccgccatgg cagaagatag gatggagcga      600
taaccggcag ctttcttttc caggatgaag tccgcagcgg ttcgaaactgc tctcgttgcg      660
attcgccgcc ggatacgggt tcgtcttgta gcggcgga aaatgcttcta tgtctgtcgt      720
gtccagaatt tcttccaggg ttgtcccttc cagtcgccga agttcatctc cttcagccgg      780
tcgttcggat ggcatcggga tagccgcaaa aggcgcgcaa cttggccgca cgcgcagagg      840
gctggtaaag accgcctcgg gatcgaggcc tttgagacgg gccaaagccg cgcagcctcc      900
tcttcgaagg tgtctogaac gtccacatcg ggaatccgta gcagtgtca ttgccattga      960
acagcaccga ggtgtggcgc tcagatatat tttcatcagt ggattattag ggtatcggtc     1020
agaaaaaagc ttccgaatcc gacaaaagata gtagaaagag agtgcattctg aaaacagaca     1080
ttcgaggatt atcgatcaac tga aaaggca ggagttgttt tgcgtttggt tcgggaaatt     1140
acctgatcag cattcgtaa aacgtggcgc gagaattttt cggtttggcg ccaagaattt     1200
taaaattttt tggaaaccaca gcgaaaaaat ctgcgcgcgt tttctcagga ttacagacc     1260
acaatccgag catttcgggt cgtaattcat cgaagagaca ggttttacct gaaatcagag     1320
agaaatatcc gtagtccaac ggttcacctt tatatcagag gttaaaagat atgtacgctc     1380
atcgaggagc tgattggctt agtaggtgag actttcttaa ggacctatcg gcacctacag     1440
gaagttcatg gcacacaagg caaaggaggc atcttcgcag accggactca tatcaaaagg     1500
atgaaacgac tggg

```

(2) INFORMATION FOR SEQ ID NO:994

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 520 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...520

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:994

```

aaaacccatg gtcttcgccg gtgtatatcc gatcgaagca gangacttca gaacttgctg      60
gcttccttgg agaaactcca actcaacgat gcttcgctac gtttcagccc gaaagttcgg      120
tggtcttcgg attcggattt cggtgcgatt tctcggtttg ctccacatgg agatcgtgca      180
ggagcgattg gatcggagtt caatatgaat gtgatcacga cggtgcccaa cgtttcttat      240

```


aaggttacga caagaaaggt ggctgcaaag aggttcacaa tccatcgga ctgccgaacc	300
cacgcttata gatcatatag aagaaccctt catcagagct tcttcacac caatacggcc	360
tatatcggcc ctatcatgac actttgtttg ggaaaagagg ggtgttggtg aagcaagaat	420
atatatcggg cgatcgtgta ggatcttcta ccgatcttctc attgggcca aatcgtcac	480
gacttctacg caaactaaag agtatcttcc aaggatatgc	520

(2) INFORMATION FOR SEQ ID NO:995

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 605 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...605

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:995

cggacatacc tgtcccgaca ggggtggtgcc attggggagg taacgtttcg ggcgcgctcc	60
acgccgttct tccatgtatt gatggattca tcgttcagga catgccctgt acgagatgta	120
ccacctgctc gataggcata ccgtagccaa gacgcccag atgagcttgg catagtcca	180
gtattcggga ttgaaactgct atccaagcct tcgatgggta ccttgaaacc tttcttggtg	240
cagaatggaa gtcgtagtgt cgttcgccgt tttcgtccct gttcttgatt atctgccgtg	300
ggtaacgctc ttcggtacca tgataccttc gtcgtcatcg gcttaccggt gaagatttcg	360
taaggacgtc catccttgag gcctacgaaa gcatccactt ttcacgattg ttttggaagc	420
gaacgacctc tgcctccagc tgcgcggacg ggagataagc atgctctgta ctgtgggttg	480
gagagctgcc gctcctcttt cttggcttctc ttcttcggct tgtcagtgat aaggacgcc	540
tgcgcgaacc gtcgcgatag acagtacagc ctttgcagcc gctcttctctg cttccacata	600
caggg	605

(2) INFORMATION FOR SEQ ID NO:996

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 953 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature

(B) LOCATION 1...953

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:996

```

agctccgttg ggaaaggccc tgctccgacn cgcgtgcaat aggccttgat atcccgtaga      60
catcgcccac attgcgagga gctactccca agccggtaaa cagccggcac atatcgtagt      120
gctactgggtc acgaacgggt aagaaccaag tcaatgtcca agagcgaacc ttgggtcctt      180
tcggccaaaaa ccttntgccc gacaaaaggg caccattgat cagaaattca ctgtccacga      240
attcaacttg cgcagatatt tngtagcctc catccagcgt tcctccagat ccgcagcttg      300
tccgtaggat agttcagggg attcagtatg cgaagatgac gctcttgccc accgaatagg      360
cctcttcgaa gccgtgttcc aaatctccga cagcaagccg ttgcggtcga ctttgtccgt      420
atatgtgggg ccgatccctt tcctgtgggt ccgatcttgc cgttccctt agccatttcg      480
ttggcagcat caacagccga tgcgtaggca taatgaggtg ggcttgccg gagatcacgg      540
acgcttggtc agatcgtgac cgtgcgggc aagagcttcg gcttcttctt gaaaagcagg      600
ggatcgagta ccaactccatt gcctatgaca ttcgtttctc accctggaag attcccgaag      660
gaatggaacg aagcacgtat ttctccggtt gaactcaagc gtatgtccgg cattggggcc      720
accttgaaaag cgagcacaat atcgtagtgc ggagtcagta catccactat ttttcccttt      780
ccttatcgcc ccattgcagg ccgagaagta catccacttt ttccatatcg gataatgtta      840
tatgtctgtg ttattatttt ttcttcttgg gagcggttt gtccgcgcct ttttgagggc      900
cgactgcttc ttctgtcatt tgtcgcatat acatagaggc aaatgatggc ctg          953

```

(2) INFORMATION FOR SEQ ID NO:997

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 662 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...662

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:997

```

ttccggagca atattccaag ccactcttta ttgcgcatat gcagaaatcc gcgaccttcg      60
tggtgcgata aaaacgcgct gttgtgtact gaaaaaagtg acagttggga tgtgcgggat      120
tcatataagt ttacacacat atccggtagt cctatgcagg ggttacaact gtcggtcggg      180
atttccctt gcacaccaca cgttacaact gtcggtcggg atttccctt gggtttacac      240
aacaagcccc cctcccaaac atttaggaca ctattgggtt tttagtacct ttagctgtga      300
taatattcag atctgtctaca tgaacaacat ggggacggct gcaacaagct aacgatattc      360
tatgtcggta tgcttcttct ctttttgatc ggctttggct tttcgccact atcgggaaaag      420
agttggaaac caatgtagt ccaaagcgat gtcccttcgg gggccagggt gattggtcgg      480
tgctttcgat ctttcagcga atcgggtacat caccatttca cggacactat cgggtgtctt      540
gttgcgatgc atcgtattct tacgggtggg agctcgtagc gtgggttttg aaaaatcgcc      600
agccactgta tcggtgaaat cgtggcgga tctctggcat ctctctggag cgttggccga      660
gc

```

(2) INFORMATION FOR SEQ ID NO:998

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 473 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...473

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:998

cgaagattat	cggcgaaggc	cgtaaaggcg	gcagcaatct	ggctgccacc	tggatcaatgc	60
catactctgc	tataacgatg	ccgaacaact	cagaccgggc	gcgatgtgtg	aagctactta	120
cggaggagct	tctcctcaga	tacggcgag	cgattcgtca	tactcgggat	gagcgatgac	180
cctcatcctt	tcttcctcct	gcggctatga	cagctattgc	ttccggcaag	atattcagcg	240
gaggcaacgg	catcatgaga	tcgtgcgcgg	actactccct	gcggatgccg	agtgatagat	300
attacagtac	cgctggatga	tgtatttgcc	cgttatcggg	agttgaggag	atagttgttt	360
tcgcttcggg	ggtaccgctt	ttcttcgggt	ttccaatacg	gtgatgaatc	ggctaccgga	420
tgccgtggta	cggctctatcc	ccgttcaaca	gcttgcatag	gcttgctatg	ctc	473

(2) INFORMATION FOR SEQ ID NO:999

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 580 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...580

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:999

cggcaggatt	ggatcatttc	ttgcgtcgag	ccaaactcag	ccataccacg	cggctatcgt	60
agctacggct	gcagcagtgc	ttgtccctat	ccagatggcg	gccagaactg	ggatgatcat	120
gatcgtcggg	gacgctatgt	gggacgcatt	tcgggtgtcaa	ttacttggag	agctgcgacc	180
ccaatgccgt	tattttacct	atggcgataa	cgataccttc	ccccctctgg	atgctcagga	240
ggtagaggcg	ttcgtaccga	tgtccgtgtg	agcaatctca	gttacttggg	agcaactggg	300
atgtgcgcca	gatgaagcag	caagcctatc	agtccgatcc	gctccattga	agaatatgaa	360
tgaagccttc	atcagccgga	atgcctttgt	tctgtcgatc	ccaattactc	tgccagagat	420
ccggagctga	acctccattc	atcccgggta	gcggactcac	ggccgatggc	aagcccatca	480
tgatgctgtc	gaagccatga	aaatagcgct	cgtccggttc	cttatggaat	gggtgtgatc	540

cgtctgagaa cctgtattgc ccgtagattc gcaagcattg

580

(2) INFORMATION FOR SEQ ID NO:1000

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 421 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...421

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1000

gaccatcggc aatggattta ctatttattc ggaaaatgcc ggtatacaag gagtgtttcc	60
ctcagcctca cctacagctt cggtaagatg aatacacagt gcgcaaggta gagcgtaga	120
tcgtcaacga cgacctcaag caaacctatc ccaaggacag caggggtggcg gacaaggaaa	180
tcctaccggc aattgacaag aaacactgta aaaaaacacc atacaatgag aaaaaagatt	240
ttcgcggcct tgtcgggtctc ataggcacag cactgatagc cgggtgcatgc aatacaaatt	300
cgacaacaaa ggcaaaacaa tcacccccaa gggcgatgcc atccggagac tcgcaacatc	360
ggtacattcg acaagatcga tgtcgaggat gcttcaacat ccactacaaa gccggtattc	420
c	421

(2) INFORMATION FOR SEQ ID NO:1001

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 750 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...750

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1001

cggtggaatg tgcaaacttc aaaaatgttt gtatatatca aaagaattcc gatatttgct	60
tgcgagaagt tttaaataatg tataatctta aaaaaacaga aaatgagaaa attctttttg	120

acagtcttat	tggcaggagc	gttttcttcg	caaatgcagc	cgatgttact	gcagtcactt	180
gttcaacgcc	taacggggag	aaacccatgt	aatggttttt	tgtacggacg	gcaggagtgtg	240
tgatttatct	tgaaaataca	gggagatgag	acagattaca	acaatgtaat	gagtaagtta	300
tgcaagcagc	aaagagattc	tgcgcttcta	attttccatg	tttaaagtga	gtcaaaaattt	360
gaacgcagaa	gctcctcaga	cattagaacc	caaacatctt	caaatcccat	ccctggtaga	420
aaaattaagt	gatcattgta	aggagcctta	tagtattcac	tataggctcc	ccaaccctca	480
cataatatga	aatccaatga	cgttatttctg	cattttatctt	tactttctac	ttactatagt	540
ggtatctatt	ccccttctgc	tcaggaaata	acattggagg	ctttcaaaca	gatactcttg	600
ataaggtttt	ccttaataaa	tgcatttata	gggtatatac	caaactgaaa	ttaagcagga	660
cacttcacaa	aatctcccta	atagagggtta	acactgctac	agataggatc	aaaaatgagt	720
aaatttatcg	atttcatcag	cattatacag				750

(2) INFORMATION FOR SEQ ID NO:1002

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 357 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...357

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1002

cggcaaagag	atattgaaag	gaatcaatct	ggagatcaat	gccggagagt	tcattgctatc	60
atggggccga	acggatcggg	gaaaagtacg	ctctcttcgt	tttggtgagg	catccctcct	120
ttgaagtcac	ggatggagag	gtgacatcaa	tggaatcgac	ctgctcgaac	tcgaaccgga	180
agaacgtgca	cacctcgact	ctttctcagt	ttccaatatc	cggctcgagat	cccggggcgtc	240
agcatgtgaa	tttcatgagg	gcagctgtca	atgaacatag	gaaagcgatc	ggagagaacc	300
cgtatnggca	agcgacttcc	tcaagatgat	gcgagagaag	cgtccattgt	ggagctg	357

(2) INFORMATION FOR SEQ ID NO:1003

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 782 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature
(B) LOCATION 1...782

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1003

```

ccgcctatga gtagtataat atagtatagg gcgcagcgtc aggtctacac tttggaaaac    60
ttctgccgga agaaaaagct ctgtcccaac caaaagcctc cgtatagcgg tagtcataga    120
gcgatccgcg gataaggccc gttgaatcga gtgtagtccc ctctccatt ttatagtcac    180
gtccgccgag gatagcccga ggatggaagt acggccggta cgttcgcctt cccgaccgcc    240
accgaccgcc gctttttctc aaaagcttgc atcagactgt cccgattggc atagtctgtg    300
cttcttcatc ggtaagcggg gccgtcacta cagcgtccca gtagaagagt cgcgatcgaa    360
agctagttaa tcgaatcgga ccttggcctg cattcggtat cgggcagcat atacttgctg    420
ggcagatgat agcccagcgt accaatcggg attcgagcat ccgaagggtg cggtttactt    480
cgcggttcgt cggaagcgaa gtccctcagc tcttcgggca gtggatagca atttgcggtg    540
atctcaagcg aatcgtacac caaggacgaa aagtactggg actccagttc agtcccatcg    600
actgcatctc cataccgatg gcatagggtg tgggcagtac acatcctttt cgagcggatt    660
gagacttata tcgaccttgt accgaacata tcgtaagcct taatttccaa ttttagtgcc    720
tgcagacacc agatgtattc gatcaccac agntcgcccc tntggcgctc cttctgcctt    780
tg

```

(2) INFORMATION FOR SEQ ID NO:1004

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 465 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature
(B) LOCATION 1...465

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1004

```

cgggatcgaa tccgagttgt actacaagga tttggctacg ggcgagttcg tctgctgaag    60
aaaacacact gggacgacac cttcggagtc atcgcgtaa ctatgcctcc aaaaacaaag    120
acgaagccta tgtactgacc aacctggcag cgacaagact cgtatogtac tctacgacct    180
gaagcagaac aagatctccg cgagatcttc gccaacgaag actacgacgt cagcggcctg    240
caccttctcg taagagaaac tacgaaatag acctcatggc ctacgaaggc gagagtccgt    300
agtcgtaccc gtaagtgcc cctacaaaga gctgcacaag ctgtggaaaa ggaattcaag    360
ggcaaagaat tctccgtggg cgattacgat gagatgagac catcctgctt atcgccgtac    420
aaagcgacaa gctatacggc actactacca gttcgatagc cgcac

```

(2) INFORMATION FOR SEQ ID NO:1005

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 493 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...493

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1005

acgctttttca gttcgttcac atcgggtctct tcctgctcat aaccgaagcc tgtttgatgt	60
tcagttctac gccggacaaa ccgtatgaag agagcttctc ttgcactgt ctatctgagc	120
cggagaaacg gtagcaccga tcaatacact tctatatgct tccggttggt ctcttccagt	180
agctgggtcgc gtatgactgc gtattgggga tactgccgat cacctctcgc acgtacttgt	240
gtgcgtttcc tgaagtagat tggtgctgaa gagctgtatg ctacagataga tactggagca	300
atcgtaacata tggcaatgac cgtaatgac cggcgcactt tctctctcgc tgtttattga	360
ggaagacttt gcgtgggaac ttcagcaaaa cgactgcaag gnaaggtagc cagtgcgata	420
aatacagaat tgatgatgaa ggatagaaa ccccgaaaga atatgcaaac tgcccagtac	480
caaggccgaa ccg	493

(2) INFORMATION FOR SEQ ID NO:1006

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 788 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...788

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1006

cagaactcttt caagtcgaag tcgcctatat caccctatc aatcagggca tacgggtgca	60
tccccagac gatgcgctaa ctgccttttc atttcgttat gctgcgcagt tcgttcatta	120
tttctaattg caattcgatg tcgccggttt ttgagcttgt gcgatttctt ttgcaaagc	180
acggatttgt acctgataaa aacattttttg atgggtgagaa gttcgcgttc cactcgcac	240
tgaagtcttc ttccgcattg ctctcatccc ctttcccata gtgaatacgg ctcatgcata	300
gcggttggtc agtagctcga ctgcgatatg actgatctgt gcatgggggtg atctctgaaa	360
tatttggtg cgacaaaacc actgtcgaac gatgttcggc agcctcatcg agaactctgcc	420
taaacacatc agtaccaata tcaactccatc cgcattcaag tctgatttga tgtaatatgc	480
caaggcaacc ccgatggagt ctgcttttcc gtccttctt catgcctgta tatgaggagt	540
ttctttcgcc gtagcgaatg atcagacgga gtaactctc ttctgtattgg ccggatagta	600
aggttgctcc acctccgctg aacgattatc ggtaggattt cggcactatg gttttccgca	660
cctacgagat tgcggaatc gtttttcttt cagagccatt cgccggctgt tgggtggcgg	720
gttgcgggga ggagtcgtac tcctacggaa cctcatcttt tggacttcgc gagccagcag	780

tcgccatc

788

(2) INFORMATION FOR SEQ ID NO:1007

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1227 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1227

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1007

```

ctcatctact tattaaacca ttcaagacaa attgaaaacg aaagcaaact atcaacatgg      60
aactgcccga agaaatagct cagggcaact tactgcaact ctgtatcgtg atgcactctt      120
ccgagcgaat ttgtcttgga cttcatcgta tggttccgaa tcgtgacacc gcacgagtcc      180
aaaatcgcat catcctactc cggacaatgc caaaagactt ttgaccactc tctcggacaa      240
tatcctcgct acgaagtgga acacggcgag atccacaccg agcaacgcgg tatcgatgcc      300
acatttacat tccaaccaa aataaaaggc gaagcctaag aaagctttcc tctctatccg      360
gtcctctcaa aatagtggca gaagcatccg tgccatattg agaggatttg tcgatcctgt      420
tgccggacatt acttacctac atcggactgc ttctctcccg atacgatacg tcatgcccgg      480
gtgctgatcg ccgcagtatc accaagtgc caccggctct tctgcaagggt actgatgtgg      540
gttgataacg actgccacgg ccggattcga ccacatcgac cgcgaatatg cgaaagccac      600
ggtatcctct ggcgcaattc ccccggtgc aatgctaggc cgtagcgcag tatgtaatgt      660
gctgcctgtg tcgtctggct ttgcgcaggg tttttccctg aaagagaagg taatgggtat      720
agtgggtgta ggccagtagg cggtagctg aagcgtttg cctccgccta tggcatggag      780
ttccgctctg cgatccacct cggtcggagg cagagcagga caatagcttt ctctctaag      840
ccgactggtg gagcagtgcg acattatctc attccacgtt ccctcaccca tgaagacct      900
cacgccacct atcacctcat cggtaggct ttctacgcag ctgtgcagac aaaaggccta      960
tcctgatcaa tgctgcccga gagccgtagc ggatacccaa gctcttattc gggctgtcaa     1020
aagcggatgc tccaagccct cgtaatagat tgctgggaag gagaacccga tatagaccca     1080
gctgtttgga tttggcagac atcgcgactc ctacatagc aggattcctg cagacggaaa     1140
agccaatgga gccagaatgt gccttgaagc cattacgaag tattcggact ggaatttccc     1200
ctgctgcata ctttagcccc tccccac                                     1227

```

(2) INFORMATION FOR SEQ ID NO:1008

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 319 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...319

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1008

tcaaagacct tatcctcgaa atggaagacg aagtgttggc aggagctggg tggatgtgtt	60
tgaagaggta ttcaaactta tcttcaccaa actttttgtg agatggagag cggacggcaa	120
caatgagcgc aacctcgagt ttcgcaatat ggcgatacgg agaccgaact caaagagcgc	180
atccaaaatc tttttgtaaa gctcgtgaca aatgggaagg tgtattcagc cccgatgcca	240
agataagctg acgccctctc acctttctgt ctgcgtagca tcgttgacagg acgtaagctc	300
ttcaattcca atcttgatg	319

(2) INFORMATION FOR SEQ ID NO:1009

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 525 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...525

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1009

cgacaccgaa atgatctttt cggaagagct tctctccgtt gataacagga ggctgcccgt	60
aatctccatc cccttttgtc cggaatcag gcggtgtggt acaaaggagt ggccattacg	120
acgacacaga cgagtaaaaa cagacactct tcatcaccat cggagtttca ggttatcgat	180
tcgttcgggt cgcaacggtc ttctgtctgc acgcagaatg tcagggttcg tccaccgtta	240
cgctctaaag cgttacttcc agctgcttgt cttcgggcag ggagaactgc tccacgcaaa	300
gaccgggtccg ttccgacgtc ttccccctga tccatgccac ctgtggcagg ctccaagcgg	360
ctgcaaaacc tgctcctgaa tcgctgtgcg ttggccacct tttatccacc acttgaaggt	420
gatgaagtcc accgagcagg gatattcgct tgattttcga taccgacgtg gaagaaagca	480
gcccgttgtg gcatacagtc ctcgagagaa ctgatgctga atgcc	525

(2) INFORMATION FOR SEQ ID NO:1010

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 619 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...619

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1010

gtaccggccc	tcgatcggtta	ttatgtcatt	gacgtagcta	tatacattct	ccagatagga	60
agtattatac	gtcnatgcta	cctcccacgg	gaatgcccg	ttctcggtga	cgattatgga	120
taacgtttgt	ccaccagccg	gttctttata	cggccaagat	gacggacaaa	ctccttcaat	180
ccttcttccg	aacggataca	tcttgcttgt	agccactgcc	gtcttccttg	agcgttcggt	240
tatcctcagc	gtaagtgtaa	tccccgcatt	cagataagaa	agttcgcgga	gacgttgggc	300
agtatggagt	attgggtattc	cgtaacagag	aagatagagc	tatcggtttg	aactgaatag	360
tcgtccccgt	acgctccgtg	gagcctatca	ccccacatca	tgcaagggtt	tgccacagct	420
gaactcctgc	atatggatct	tccattacga	tacacctctg	cacgcaaata	tgtggaaagt	480
gcattcacac	agaaacgccc	actccatgca	aaccgcccga	gactttgtat	gaacccttgc	540
aaacttacct	ccggcatgca	atacggtcna	aaccacttcg	agagcacttt	accttctttc	600
tcgtgatagt	ccnccggaa					619

(2) INFORMATION FOR SEQ ID NO:1011

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 459 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...459

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1011

cccttgccaga	cgagagtttc	ctcctggata	tagatttggg	tattacggga	atacgtgccg	60
agaagtcctg	cggcagggcg	atagcctcat	cgagagcatg	gtgtgcagcg	actgggtatg	120
cccccaggcg	gctgccatag	cttcgatcag	gtacgtccga	cattgttgaa	cgatccctgc	180
tccgtcagcg	accagctgac	gtctggctgt	gtgtgcgcag	agccaatgac	ttggggttct	240
tcgcccgaag	ctcttcacga	tcttgcccca	taggaggcgt	gccgcacgca	tcttgcgatc	300
tccatgaagt	gattgacgcc	gatggcccag	aagaatgaga	gacaggagca	aaagcatcca	360
catcgatacc	ggcatcgata	ccggctttga	gaactgcata	ccgtctgcca	gcgtataggc	420
catttcgatg	tcggcggttg	ccctgcctct	tgcatgggtg			459

(2) INFORMATION FOR SEQ ID NO:1012

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 382 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...382

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1012

atagcttcgt	cggcgtactg	tttcacataa	gcctcgtatg	tacggtttca	ctctgagcct	60
gtccgatcgc	tgtcccgaag	aaaaagagaa	cgaaacggaa	gtatctgcca	aatgtttgct	120
ctcatctgtt	tgaaatagtt	gcaacaaaca	acgttagcta	caaaaagtaca	aataaattgc	180
agtcggtcag	ggagatcgga	gcgatctctt	ttggaaattt	tcagtctctt	ccctctataa	240
tttgatccct	gagatatgaa	ttcgtgcttg	ttttgataat	tgaatgtagc	aatctgaagc	300
tatacgtaca	ttaggagttc	aagtgcgatt	gccctgagtg	atcacaccct	ctttatttgt	360
tctttaatac	ggacagggga	tt				382

(2) INFORMATION FOR SEQ ID NO:1013

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 726 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...726

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1013

cgggagggtta	tggcttgccg	catcagttcca	tcgaagaaag	cacagtcctcc	cgtatcacga	60
attgctgctg	catcagcatc	agggagctga	cgatgatatg	gcgataatcg	catatgcggt	120
catcgatatcc	gcattgcttt	ccctgtaaaag	agaaggccgt	acaatatgaa	caagaaggaa	180
aagatgaaaag	tactgcaagg	cgtttgagc	gcaagatgag	cttgatatgc	agtgctatca	240
cctcgctatg	ataccatgct	gacgcacaaa	attcagattg	tggtaccgct	ccgtctgttg	300
gatttggtgc	gctcttttagc	atagcgatgc	tgtctgaaat	accctggctc	gctatatatg	360
ttccggccaa	tatcgatgcc	atgcagatcc	atcgatatat	accggaaggg	acgagacgaa	420
gcggaacagg	cagtccgacc	aggcacgaat	ccggtgattt	ctgtggcgag	catgagggct	480
atggcaccga	gacgatgata	tagaatcgga	gaccatcgcc	cagtatgcgc	ttcagatatg	540
agccaagagc	atatcggtca	gcgtaagcat	cagcagggtg	acgagggcac	agcgaaatcg	600

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gctgcccctt cttctatccc cgtcacaatg ctgtaagcag aaagaggaaa acgaagacgt      660
agtaattgat cggattggcc aatgggggaa tataaggtac tgtgctatgg ctttgcgcg      720
tatcg                                           .726

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(2) INFORMATION FOR SEQ ID NO:1014

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 631 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...631

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1014

```

cccagcaggg tgctaccctt actttacctg ccggatgccg tctgctgatg ccaataaggc      60
ccacatcaag gttcgggggc gcctaattggc ggagggcatc cggccaagcg agtgatgata      120
gagaatctgc gccacgatct cctcgtaagg atgtacctta taccctcggt cccggacagt      180
ggggcggtat tctttttctg aagagagtcg tggcaatgaa cttcggtata ctactatccg      240
caacgtcgat ggggaatcat tgccgaaggc ggtaaggatg tcaccacccc aaaatgcttt      300
tggagggctg tatggtcacc aatacgaag gctccggtct ggcgcttcg gtggctatat      360
ccgtattctc aacagtgaga tcagcaatac cccggtata ctgtagccct cttcggcagc      420
gtatgcgaat tgacccaaag cctgtttgca atttctatag atgggacaac cgccaagggg      480
aagccttgcg ctacgtgacg gcattcgctc ccgatgtggc aggcggatcc tatactccta      540
tcggacagtc gttgatttgt cacagtattg tcgatggcag tcggtctggg tcaaacaggg      600
agataagaga gtggaggaga aatcagtcctg t                                           631

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(2) INFORMATION FOR SEQ ID NO:1015

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 644 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...644

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1015

aaattatttta	tcagcagatt	aatagtcaat	tgacggaatt	gcataataga	gagcctcctt	60
tcaagaagaa	gtgaggaata	tatataaaaa	ggcatatgta	agtattgtgc	agagtagttt	120
tattgcattt	tttctgaatc	tggaactttcg	cttaggttta	taggtatcca	gcagttttct	180
acaacaatct	tgcaattcac	cttttgtctt	tttccttctg	gtaaaaacga	aagtatctgt	240
tcagcatcgg	agatggcggg	atcaggcact	caacctctgt	tctctgtatg	gagcgttgca	300
aaacgaggaa	cagtttggtg	tcggcgggat	cctctgaagg	atttaaatac	cggtcgggtg	360
gattctctca	aaactactag	tagatccttc	caaaccacta	gtggatttcc	tcaaaaccac	420
tagtagattt	tctcgaaact	atagtagatt	tgacgtgtac	tgaaaaaagt	tgacagttgg	480
gcgggatagt	ctacaattgg	ttnactgggt	ctttctataa	ttctacttta	ggtngacagc	540
cttaccntta	ngtctaattt	cggntgacac	gagcaaagtn	agctctttnc	tgacatncat	600
cnntcgggnat	agctcggggg	caatcttggn	nccatgcctt	ctgt		644

(2) INFORMATION FOR SEQ ID NO:1016

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1296 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1296

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1016

agatgcctga	aatacataat	gtggcaggcg	acccctcttc	cctgatggag	ctttcctcgg	60
ctttataccc	ggctccatcg	gtgaaacctc	tactctggta	tcctgatcgg	agcctggccc	120
tgctgatttg	gacggggatc	gogagctgaa	gatcatgttg	agcggtttgg	taggagcctc	180
agcaatggct	ctcgtatcaa	tgccatcggc	acgacggcgg	cgatgcagat	cactccgctg	240
atgcaattgt	ctatggaggc	tttgcttttg	gcttggtatt	tatggccacc	gacctgttac	300
ttctgcccg	acagaaaagg	ggaaatggat	cttcggttcc	ttctcgggtc	gatggctgta	360
ttcatccgag	tgctcaatcc	gggttaccct	gagggatgat	gcttgcgatc	ctgctcatga	420
acgtatttgc	tccgctgatc	gctatttctg	ggtggatagc	aacatcaaag	cgcgcaaagc	480
acgtatgctc	agaaatccta	accgctaaat	atttcgataa	agacatgaat	agagataaaa	540
ctcgtacacc	attctctatg	cctcgggtgat	ggttattgtc	gtggcgggtt	gctggcttac	600
gtctctcagt	cattggggcg	caggcagcgt	gacaacggaa	gatagacaag	atgcagcaga	660
tcctccgctc	tgtgaatgcc	ggaataaaga	taagggcaaa	gtaatagctc	ggtacacgga	720
cgtgatcaag	caagactgct	catcaatcag	gatggtacgg	tagccaagac	cttcgagggc	780
gagcgttggc	acaaaatgaa	gcattcacgc	tcaatacgcg	caatgctttc	aaacggccgc	840
taatgatcca	agcatttctc	tccctctcta	tatcgcagag	atgagggtoa	gaagaaatac	900
attgtcccga	tgaacgggtg	cggctcttgg	ggccgatctg	gggatacatt	gcactgaacg	960
aagactgcaa	tacgatattc	gtgcagattt	cagtcacgaa	ggcgaaacgc	cgggattggg	1020
agccgaaata	ctcgtctcga	gttttccggg	cagtttatcg	gcaaagaaat	cttcaaaggg	1080
gcgaattccg	atctgttgcc	gtagtcaaga	aaggccagaa	agccgaagaa	aggactatgt	1140
ggatggcatt	tcgggaggga	cgctgacgag	cgatgggtga	atgagatgct	catatcctct	1200
ctccgtcctt	atgctctata	cctaagaaca	acgtaaaaaa	ataagggcta	tgtaactttg	1260
gaataaaaaa	aataggaaat	tcttctcggg	ccgcta			1296

(2) INFORMATION FOR SEQ ID NO:1017

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 599 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...599

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1017

```

cggggtgggat tgggtttcca cgccttggct gtccggaggt ctccggaggt gctgtagagg      60
ccggcgggga aagcgtctgc actcggagcg tatcgggggc ttcgtggccg ccgaatcggc      120
cgcaactcgcc gccggccgcc cgatacttcg gggacgacgc tctgtgccgc tgccctgagaa      180
agacaaaggc agaggacaaa acgacaattc tccaacgact tccggacatg acggctacgg      240
tgtgagatta gcggtacgc tcgagcaggg ccatgattcg ctccagctct tcttcgatgc      300
gaaggggaatg gtcagcttgc ctttgccctt ggcgtcgcag tcggcttgac tttcgtccgg      360
aagaatcggg acaactgccc cgtgagcagg cgtattcttc cggcagggac tgcttggttt      420
tctttctgctt ggcggggcgaa tggcaccttc ttcgcggtag tgcgccgcca gactttcgac      480
ggcacgtaca tcagtccctg cctgatgata tcggcataga gggcaagctg atgctcgggt      540
cggggatact gagcaaggcg cgggcatgcc ccatatctat tttcttcttg gtcagacct      599

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(2) INFORMATION FOR SEQ ID NO:1018

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 471 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...471

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1018

```

tctacagact tttctcattt ttttccgatg ccgagattac cttggaggca atcccagacga      60
tctgaataca agctatgtac aggagcttcg tactctgcga tcaatcgaat aagtatggga      120
gcacagagtt tccacgatga agacctgact tcctcaatcg tcggcacaat gcccgccaag      180
tgctcgaagc agtggaaacct gccgcaatgc gggacttacc aacctgagta tcgatcttat      240

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ttacgtctac	ccgggcagac	gcctgctcgc	tggcaagaaa	atatctccgc	agtgttgctc	300
tctccccacc	ccacctgtcc	gctaccatct	gatatacgaa	gaagaacccc	cctgacacgc	360
ctactccatg	caggaaaggt	gcgcgaagtg	gagaggaggt	aagcctcgaa	ctcttccgca	420
tgcttcgcga	acagctgaca	gagccggtat	gaacactacg	agttcaattg	c	471

(2) INFORMATION FOR SEQ ID NO:1019

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 444 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...444

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1019

cgcgtttctac	gccgaaatct	gcgatttccg	cacggcgaag	gacatcgggt	cgaccgtccg	60
gaaaagcatg	aaattctgca	tcacattccg	ccgacgccga	gcaggaagcc	tttatccaaa	120
agctgatgga	atttgcccg	accggtatgc	cgagctattg	ggtcgggaga	aactctccga	180
tcgggaagaa	aaggcgagat	gcttatcgcc	accgactacg	cccgaagat	gtcgctcgac	240
atgcgatgat	ctctccttct	tacgaagacc	atatcgacaa	caaggcttcg	cactcgcccg	300
actgatccac	gattattacc	ggaaatatga	acgggagaaa	aggaccccag	tttgttttct	360
cggatttagg	gcacgtacaa	gccggaccga	gtgaaacgtt	tacagcgaaa	tcaaacgaaa	420
aactgacccg	atgattatgg	gatc				444

(2) INFORMATION FOR SEQ ID NO:1020

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 530 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...530

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1020

ctaagcggaa	tgccgacett	cggtatcgag	ctgggcgaca	tcgaacatcc	gaatacacgt	60
tggaggagat	tttccggtat	ttggccgatg	cggacaggcc	ctgtatcggt	gccatcgatg	120
agttccaaca	gattgcgaag	tatccgggaa	gaatatcgag	gctcttctgc	gcactcatat	180
ccaaaagctc	cgcaacgcaa	tttcattttc	gccggcagcg	aacggcacat	gatgcaggag	240
atgttgccctc	ggctgcacgc	ccgttttacc	acagtgccga	tatgctggag	cttaggccat	300
cgaggcggat	gtttatatcc	cctttatcgt	agggcatttc	gagaacgccg	atcgacagcat	360
ctcgcccgat	gatgcacacg	ggtttaccgg	ctttcaaagg	gcatactttc	tatatacaga	420
agacctttaa	cgaggctttt	gagacacgcc	cgagccgaag	tatgtaccgg	ggagatatcc	480
gagtcggcca	cgataatatg	atagcatcga	acgataccat	attccgcgag		530

(2) INFORMATION FOR SEQ ID NO:1021

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1306 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1306

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1021

cggtggcagc	gcaccatata	cccacactgt	tcgaccactt	tccctgcggt	gaatcagccg	60
tgttcgagca	gctctattat	gcacccatga	tagaggttcc	gtaggggtcc	gccgaaatgt	120
tgccacacac	ctgccggctt	tcgggtgctg	atcccttcga	gggaaaatcg	tcgcatcctc	180
ggcatcctgt	tcccttgga	tgtttcctg	gcagagcacc	tgaagggggc	gcactctatt	240
ccatatcatg	ggtgggggtg	gaaatgcttc	gctcatagac	ctttccgacg	aggaatcagc	300
acgattgcaa	tggaagagct	acgcgatatg	ctgcgcatac	ctccacctgt	aagccggatc	360
tgctgcacat	ctcacgccac	cgccatgcca	tacgcaatac	tacgccgata	cggaaacttcg	420
gcaggacatc	atccggcgga	tgaaatgcgc	tgcccgggct	tgcatctggg	tggcaatatg	480
catgggggaa	aggtatggca	catcgtatct	cacaagggtg	ggaaatggct	cgaagtatct	540
agaagagaca	gccatcgccg	aacgctctgc	cagaggctga	ccacgacatt	gcttttccct	600
cattgcgagc	tacaccccaa	tcggtccacc	cttctctcac	cctgttctat	ttattcagga	660
caaattcata	agcccgacaa	gccaagaaac	gactcttgat	ttgatacttt	atgtctatat	720
acagacactg	aaaaaagtca	attgacaacg	aaatctcccg	gaaaatgccg	tgtgacaatc	780
tcattatcgg	tttaacagct	cgcacggaac	ctcccactcc	ccgaacctgc	catcgacaca	840
gagcagatag	catcttccat	caatagatca	tagtatcctc	tctgtgagac	cataatatcc	900
tctcatatga	gaccatagta	tcctctcgtg	tagaccatag	tatcctctca	tgtgagagca	960
tagtatcctc	tcatatgaga	catagtatcc	tctcgtgtaa	gaccatagta	tcctctcata	1020
ggagaccatg	tattctctca	tgtgagacca	tagtatcctc	ttatgtgaga	ccatagtacc	1080
tctcgtatga	gaccatagta	tcctctcgtg	taagaccata	gtatccttca	taggagacca	1140
tagtatcctc	tcattgtaagc	atatacgactt	gggtcaaaat	acattccggg	ctttcctgta	1200
tcgattcgtt	gacatgacgt	ccctgatgag	acctcttctc	ggttgatgat	tttctctgtc	1260
gtgccatcat	tttggtcatt	gatcatacca	taaacacaca	aaacaa		1306

(2) INFORMATION FOR SEQ ID NO:1022

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 339 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...339

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1022

ttatcatggt	aacccttta	caattattcc	tatgcagaac	ttaatccgta	agagccgggt	60
catgaagatc	ggcaagcatg	gagagaccga	agcatcngca	cggttcacaa	cattttattg	120
tacttttagg	cctcathtag	aacgctagga	gcaagaaaaa	cagttgcana	cagagtatat	180
cgagagcgac	atcnagcgct	ggaatgggac	gagcatattc	nccgtcgtcc	cgggatgtat	240
ntcggaagct	gggcatggc	actcatgccg	atgacgggtat	ctatgtgctg	ctgaagaagt	300
gctggacaac	tctgtggacg	aatttgtcat	gggtgccgg			339

(2) INFORMATION FOR SEQ ID NO:1023

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 514 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...514

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1023

ccctgaagat	acaaagaatc	aactcatacg	agaggatact	atgggtctcaa	tagaacgttt	60
tcgatttgta	tgtacttctt	tctgtgagatt	gccattactg	cttgcagcga	ggaatctacc	120
ngaggaanat	tgctgttg	ccgaacgagg	ccattgtctga	tctctcgcaa	gaaaacacag	180
tctgccaatt	ggctgagatc	atacacaccg	gatgttgcca	ccctgtgaag	tgtttgctat	240
gtttgtact	tgaactctg	ccaagagatt	cttaatcaag	gagccaggca	acaacgaaca	300
actcgggcga	atgggcttat	attttatact	catcagagtt	tgttttgtga	taggccaagg	360
gtaagattat	ttgccaggc	gactctgata	acaacgaagg	agaggcaccg	tgtagttcc	420
tctcctttct	attgcaaaaa	atgacattta	ggacacgatt	gcctttgaca	gagtagatag	480
tggcttgaga	gaaaaagaa	tgggtaaaat	cagc			514

(2) INFORMATION FOR SEQ ID NO:1024

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 695 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...695

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1024

```

cggccgattt tagccacgag gctcgcggtg gtcacgatca ccaccacgag ttcgaagtta      60
cgacctcett cgcgtcctcc ttcacgccgc tcacgccgtc tctcggctga ggctccacgt      120
agcettccgg tttttccagt agcacctgcg gctgagtttg aacttgccgg tcttcggatc      180
tatatcgagc agcttacgtt gatggattcg ccttctttca ggttggtgtc ctcgatggtc      240
tcgaacgttt ccaatccact tccgagatat gcagaagtcc ttcttgccg gggagaattc      300
gacgaagcag ccgatggca tcacacttgt gatcttgccc ggaaggtttc tccgacttcc      360
ggcatagcca cgatgccctt gatcatgccg atgcagcatc gatgcagggt ttgttcgtac      420
cactgatctc gatgacaccc agccatctac ctcttcgatg ttcaactgtg caccactctt      480
ctcctgtatg cttggatgat ctttcgcccc gggcctatga ctgctccgat aaactccttc      540
cgatatgcat cttctcgata cgcgngcat gaggctatga ggtcatcttt gtctcgggct      600
gagcttccat gatcttgccg aggatgtgta ggcgtnctgc ttggcttgct ccagagcatt      660
ctccaaaatc tcataagctg agaccaccac cttga                                     695

```

(2) INFORMATION FOR SEQ ID NO:1025

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 599 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...599

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1025

```

cggggaaaaa atcccatcag atcgagatgt gcaatgctga aaacgatgga gtcagccaaa      60
ctgcagcatg ccatctattg cgggtaacac ggcgcacatc cgtaatacgg ctctctctaaa      120
aaacaattct tccgtaatgc ccggtatatt gcaatagcaa gcaaagccca acccttgccct      180

```

```

ccctgcagca tctccttatac aggcttgtat aatgggcacc gctacggtcg atttcttctt 240
gccaaccgga gggagaaagg gcagaaggag ctttatacct ttgggtcgta atacacggcc 300
aaaagacatc cggcataaga gagtaacagc agtactgctt tgcccaatcg atctgatacg 360
gttgtaggcc caaaaaagat gtaggcctgt caaaaaataaa aaggcttgcc atacagcccc 420
tccccgaat accacgacgc taataagctt gtcgccaata gcaacggcaa gccttctgt 480
ccgtacccga tagagtaggg gctaagtga gtagagagat caggagatag ccaataatcg 540
tatcagagca agatgactga gtataggcca atctttaaaa agancctttt cnttgctta 599

```

(2) INFORMATION FOR SEQ ID NO:1026

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 538 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...538

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1026

```

cggcagcttt ttcccgtagc tgtccacacg caggagacg atatggatag ctgcgcgcgcg 60
atgtcgttgt gcttgaatac gatgtaaggc tgtttgecta tcccatcttt tccatgtatt 120
cccgggcgat gtcctgtaac tgctccgtgt cagcctgtcg tccggatgcg gattgagggg 180
acagtgaaac accgtctttt cgtgcggata cccgacggga tgcgcatatc catatcggtc 240
aatgccgttc aaagtctggt tctccgtttg catccacgct catcgaggag gtcaaatgac 300
ggaggcggtt cccgccgtta ctttggaataa gttatatccc aacctttacc catgcttttc 360
ggagcggtta tctcggcaac catcgttctt cgaagctact gtgagcccg ttcgttcttc 420
cagaagcgca aggagttctc cgtgtattgc tccagctttg cagcaaacg gccgccgttt 480
tgacggaatg tacgtgtaat ggagcggacg gcctgatgta gagcacgcca accttgcg 538

```

(2) INFORMATION FOR SEQ ID NO:1027

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 671 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature

(B) LOCATION 1...671

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1027

cggacgatga	agcttgggtcc	aagctgtagg	agcagggcgat	atgctgctggt	gaaattgtgt	60
acctcttcag	ccggtttgtc	ccaatcgata	cggcagtctc	tttgaaaatc	ttcggagccg	120
gtcgagcatc	aacatagccc	ggaagttctc	ctgaggtatg	gagacgggtt	ctccttcgag	180
aaacaagtcc	actgtggcac	caatacggat	gcaccgagag	tagccatacg	ttcgtacaat	240
tcgccaaaagt	ctcttcatgt	cctataggca	acttctcttg	cagcagtact	tcaccgtatc	300
tatctcatgc	cggaggcgga	aggtggtaac	tcccgtttcc	gtacgccatg	gcgtatcgcg	360
tggttgatag	gggctgctcc	tcgatacatg	ggagcagaga	gccatgcaga	ttgattgttc	420
ccatgggggg	catttgccat	aggagcgagg	aagcatacgg	aaagccacta	cgatttgcaa	480
gtgcggctga	aagtcgtag	ttcatcgaga	aaagattcct	cgttcagatt	gtccggctga	540
gaataggcag	acccaattcc	tgtgcgtata	gtttgaccat	actgggacta	ccttatgtcc	600
tcgaccata	ggcttgtcgg	gcatagtgac	cacagcttta	cttggtatcc	gttttcgacc	660
aaagctcgga	g					671

(2) INFORMATION FOR SEQ ID NO:1028

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 591 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...591

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1028

ccaaaaggaa	aagagaaggt	gatatgcttt	gatcatgcag	aaagagggca	cagaggtcgc	60
ctgtgttttt	ttcctacttt	tggattgcat	aatcgatagc	acaaactgca	tatggtattc	120
aactttctga	tagtttccga	tgaggtgaag	atttccgccg	agagatagcg	atcgactccg	180
aagctacett	cctcgactcc	aaaatgcgat	tctggactcg	gtgggctatt	cgcacagcga	240
gctaagtctt	ttttcctctg	cgatgaggac	tggcacaagg	ggcaggagat	tacgtgatgg	300
agatggacac	ggcctcgga	gaggactcgt	atgtgatgga	gaaacacgct	tggaagagtt	360
catcgaggac	gaacaccaac	gtctcgtctt	cgattcgact	tgatgacgga	gcgttacttc	420
tttatcgaag	tgatggatat	ataccgggca	aatcgctctc	ggagcctaag	ctccttacgt	480
cggaaggatt	cctccgcaac	aaagctctct	ggacgatctg	atggatccga	ctgccattca	540
accaagcaag	ccgggggatt	ggatctggaa	naanacttct	tcggcgacgc	g	591

(2) INFORMATION FOR SEQ ID NO:1029

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 601 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...601

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1029

```

cggaatccat catcatgaag acagagttga atccgtcatt gtctgaacta gttgcttgat      60
cagaacattt gacaaacggc cattgatatg tgtccatggt cgataatctg attgtatcgt      120
tcattaaagg tgatgaatcc catactgagt cttgcataat ctgctcgacg gcagtgtaac      180
cttcttggat caattgtctt tctcatcagg aataagcaca tctgccaaagt tgaaagacaa      240
gccaccttaa aagccatgta gtaacccaaa ttcttgatat catccaagaa tttgctgttg      300
tagctactcc gcagatcttg attacgctac cgataaatatc tcgagagctt ttttcccagag      360
tacttcattg acatagccta ccttcttcgg taatatctgt ttaccatcag tcgccctacg      420
gatgtctcta ccatacgacg acaagttctc cgttctcgta atcctctaca tagaccttaa      480
tcggcgcatg atatcgactt accctcgat aggtattgn cgcttcttca gggccataga      540
aatcaggccg tgccctttgt atgggacgta gcttggtaat ataatagagt ccaataccat      600
a                                          601

```

(2) INFORMATION FOR SEQ ID NO:1030

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 487 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...487

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1030

```

agttttcccg gttttcctac catcagaaaag tactgaagct tgatgctgag actgccgtat      60
aacatgaaaa acgagggtgac atattcgatg tatgaggatg aaactccgcg atactgccgt      120
tgcgcggtgga gtagcctccc gtggaaaaca agtgaaagcg tggcaaattg catcgaacag      180
ccccatcggg cccaacacaa aagcagtatc agcacagcag ttccgagaat atagacaccg      240
cagagcgggc tggcacctga cggatacgcg gcagaaaacg atcgtggatg atgccgtagt      300
ttccgcattg tatatttgcg aaacggcact tcctgcaccg agctagggag cagccctacc      360
gtaaagacca cgataccgat accggcctgc catgcataat gctacgccag aaaagaatgc      420
ctcggggcaa agactccacc tgggaatatc gtggcttctg tggttcgtga accggacatg      480
gtctcga

```

(2) INFORMATION FOR SEQ ID NO:1031

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 544 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...544

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1031

```

agtgcgtggc gtaaaccgcg tagtctacga catctcctcc aaaccccccg cacaatcgaa      60
tggaataaac aatgtcagcc catacaggaa tctgtacacg accaccgatc ctattcacta      120
ttataaaaaa ctgctttcat gtccacgacc aaccggaaga tactcgtaag gtaactacac      180
atcgccctcat cgagataaga gccgtgggga gaaaatctcc atgctcacag cttatgacta      240
ctcaaggcta agctggtcga tgaggccggt atggatgtca ttctttagg tgatcggtt      300
cgaaacgttat ggccggcaat gtcaccaccc tgcccatcac tctgatcaga tgatctacca      360
cggcaagtct gtggtcaagg cgtcaagcg tgtcttgtgg tcgtagatct tcctttcgga      420
tcctatcagg gcaactccaa aaagccttgt gtcggccat ccgtgtgatg aaggagacac      480
atgccgactg atcaaaactcg aaggaggaga agangtgcgc gagtccattg tgcgaatccc      540
tcgg                                           544

```

(2) INFORMATION FOR SEQ ID NO:1032

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 813 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...813

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1032

```

ctcctttccg atatgattag caagaacacc ttccgaacat ttctcctatg ttgatccga      60
tatccataac cttccaaacc caagcggcac ataccattcg gccgacacac tccatctcga      120
caagggtcgg gaattcagcc ggcatgaagc acggcatggc tgccggccac agtgcccgga      180
gtcgtgcagt acgacctatc cgtcatggtt tgctgccga tcccaactac agacttcagg      240
aggaaaggca caatggccgg aagagcacga ctgggattat cggtgctct tctcctcacg      300

```

gaacagcaac	tccgaagcct	acgagccatc	cttatggcag	aagactggac	acctatgcca	360
ccgtattcct	caatgggaaa	aagataatgg	aggccacaat	atggtttgtc	ggcagagaag	420
cggatataac	ccggtctact	ggaaaaagcg	gaaacgaact	gctgatccgc	ttccgctcac	480
ccatgaagga	gtacgccctc	tgagacagcg	cgatggtttc	gactaccctg	cagacaacgt	540
caccacaacg	aaaagctaag	tgtatatact	cgaaaagcac	cctaccacat	ggttgggact	600
gggggcctcg	actggtaacc	acaggtgttt	ggcgaccgtc	ggcatacgtt	tcgaaggggc	660
agtagccttc	gcacgcgaaac	cggagacacc	tacacgctga	caaaagatgc	tcaggtaaag	720
tgtctctttc	ctctccttgg	aacgagcaga	acgaccgctc	tgtccgttgg	ttgtggaagc	780
tgtaagcccg	aacggacgaa	aagtgcacag	cga			813

(2) INFORMATION FOR SEQ ID NO:1033

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 592 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...592

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1033

cagcattcgc	agtcgttcga	catcggtacg	gtacgtctgc	tcagcgaaag	gttcgccctt	60
atgttcgaga	agcattccgc	tcggaactca	tggccattca	aaagaatata	ccgacatcta	120
cgattatcgg	cacgggaggc	aatatcatcg	ccttgctcgt	ctgagcggat	cggacagggg	180
gtcttctcgc	tatagctcat	gccggtagaa	gcactgcaca	agacatacga	cctgctcaag	240
cccattcaac	cgaagaacga	atggtaacgt	tccacctcaa	acccgaccgc	gcggtgtaat	300
catcccggca	gcagagattt	tccttgaggt	ggcgacatt	accgagccaa	aaccatcatt	360
gtcctatcgc	taggattggc	agatggtatc	atgaagacct	ctatatacgc	caccagtctc	420
aaccctcatg	aaacgacagc	aaaacagcgg	aggaaagcag	tgancgatct	ctgccaccgt	480
agggcaagcc	atgccaatcg	gttactgac	ctacagaagt	gttggtttg	tttacgtcac	540
atacggggat	catcctctta	ttatgcgccc	aacatgcccc	acgccgacca	ct	592

(2) INFORMATION FOR SEQ ID NO:1034

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1002 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1002

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1034

```

cgttcggctt tgagcttcca cagcatcctg agagagtagt agttccacac cttaccccca      60
ttcatcatac gacctgaagc attgatccga ggcccgattt gaagacgatg tcgttcatat      120
ctatccttcg cttcttcaga ccgcataatc tattatagcc tgcaagccga gacaaggcg      180
tttattaagt tggcgcgtcc gtaataggcg agtatgcggt tctctcccat gatagggaca      240
atatcgaagc tatactgaca gccacgaggt cgagcaaagg aaggagcttg gattgggcaa      300
attgttgctc cgagcatagg cttgcataaa cttgaacccg actcacagcc ggagagatgt      360
tcgtaaggat acgtattgtc agctcttttg gctccagcac cgcaacggca tcaggtagcg      420
tttcatccgg attgtgatgg tgcagataat aaaatcaatg tcaagcgact tggcgtatgc      480
caccttttcg cggctttgat accacagtcg agtacgatta tcagtttcgt tccgagagat      540
gagccaaatc aattcctcga taagagatac cataaccctc atcgtaccat ccggaatgta      600
gtaatccaat tgggtttcgg agcagcccgt ggcgcgcaat acttatagac gagtgccact      660
gccgtggtac cgtctacatc atagtcccgt aaatcatgat tttttccttt cgcctactg      720
ccctgttcag gcgagtacag ccttgtccat atccttcacg aggaaaggat cgtggaagat      780
cctcaatctt gggcgaaaag aacgcttagc ttccctctac gaagctattc cccgcgtgcc      840
aataggcacc ccactacggg cgcgagcctt agctcccacg agatattgtc ccgagggaac      900
gttcctctgc ggtaaacggc tccaaattcc attgtaattc attatatgtc atttttttac      960
tttttcaatt gtgaatagca gaagtcgaaa cgatgggcac gc                          1002

```

(2) INFORMATION FOR SEQ ID NO:1035

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 470 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...470

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1035

```

ttggaaagct ctttcagagg cactttcgcc aaaagctgct cataaccctg cggetgttca      60
tacctatgat gatggcacga cgtccctgca tatcgtctctg acatcgncca aataatcggc      120
aggaaccgat acttcacatc catagacggc tccagaatct tcgggcccggc ttctttgaaa      180
gccgtgctga aagcatccga ccggccagca tgaacgatac ttcattgctg tccacagggt      240
gcacttacca tcgtaaacca ctacgcgcac atcgcgagca tacgaaccgg tcagggaccc      300
tgctccatgc gcgacatgat gcctttcagt atggcaggca tgaacgcata tcgatggcac      360
caccactacg gctattaacg aagacgagct tacggcccat tccaattcca ctacctgcgt      420
gtcgcgccgg agtgatacga actctggccg ccgaatttga acgattcggc                          470

```

(2) INFORMATION FOR SEQ ID NO:1036

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1007 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1007

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1036

```

cgtggcacgc tacgcggaact gcttactacc gagctaaagc aaaacgaagt gtcgttgctt      60
ccttgtagca acgtatcctt gggcgcgctct ctgttcacat attatccatc ctactacagg      120
ggatataatc gttagagcct ggagaaggat cagagagcag gcagcacaga ttatcgaaga      180
ttcacctatc gaagctttga aatccgttct gttctcacct gcgaatccaa gaaaggagta      240
tgtgcaagtg ctatggtaga aatcttgcta ccaaccgcat ggtacaacgg ggtgggtcgt      300
aggcggtatt gcagctcagt ccattggaga gccgggtaca cagttactct ccgaacattc      360
cacgtcggag gtatcgcatc caatgtggca acgagaatag cttgctctcc aaatatgatg      420
gtatcttgga attcgaaggaa cacgtgctgt ggatgtaaca gacgaatcgc atcagggtcgt      480
agtgaagtgg tgactgaatt gcgtattgcc gatccgaata ccggtatcat tttggccaac      540
acaatatccc ctacggtgca aaattgttct tccgccaaagg tgatgcagca agaaagggtga      600
caaatatcac gaatgggata cgttcaatgc ggtcatctat cggaagtagc aggaacactc      660
tctttcgaag gtgtagtgga gaatgtactt tcaagatgga aagcgacgag acgaccggtc      720
tgaaagaaaa gattacatcg aatccaagga taagacgatg gctccctatg ctcgaataat      780
agacagaatg gagagatgct caagaactat agtctcccga tgggtgcca cgtgtgaaag      840
acgatggcga cacagtcaaa gttggcgaga ttttggtgaa gatcctcnat cagtgggaaa      900
agccggtgac attaccggtg gtttgccctc ttcnccgaa ctattccaag cacgaaatcc      960
gtcnaatccc gcgatcgttt cgaaatccat gggaaatcng ctttggc      1007

```

(2) INFORMATION FOR SEQ ID NO:1037

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 835 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...835

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1037

tcattcttgat	cagaatat	tcctcctcaa	tgccttccgt	ccgggtccgaa	gggaaaagag	60
aggtaagaga	tgattattgt	tggttcttat	tattgtaatc	ttgggggttga	agtctttcca	120
aatcttcagc	agcttttctg	tagcttctgc	agactgcctt	ggaactcgcc	gccggcagca	180
ttcttgtgtc	cgccgcaccg	aagttctcgg	caaggggtgtt	caccggatag	ttgcctgtgg	240
agcggatgag	agcttgatct	gatttttgtc	ctctcgcagg	aaacatacag	cctcatccct	300
gcaatatcga	ggggcagatt	ggccagacca	tccgtatcac	ccgcgggttg	tggaatcgta	360
ccagctcctc	tgttgacagc	gtgaagtatg	ctcgccatt	tccggcagca	aagtcatttt	420
ctcgtacagc	acataaccct	gacccctcatc	ttgccttccg	aattttgctg	aaaggatttg	480
cggatgatcg	gtctttgtcc	gcaccggctc	gcataagatc	tgctacgagc	agataaagac	540
cggatcggaa	gagctgtagg	aaaatacgcc	cgtatccgtc	agtatcccg	catcaaagcc	600
gtggccgcat	cttgggtcag	gtaggactcc	atgcctaggc	cttggccaaa	cgcaagacca	660
actccgaagt	agaagacagg	ggggggagct	gaagctgaga	gtgaagatat	ctgccggata	720
gagatgatga	togatagcac	tttgggggct	gacgaactct	ccaatgcgct	ttgcagtcct	780
gctaccgatg	tggagcattg	aaatccatgc	agaagaccag	atcggttca	gcctt	835

(2) INFORMATION FOR SEQ ID NO:1038

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 914 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...914

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1038

gaactaaact	tctcactcat	tattcaacca	atagaaaaaa	cagataagaa	ataatcattg	60
ctatggctct	tacaaaaact	tcaaaaactct	attacaaaagt	ccacgactac	atccttatta	120
ttctgggatg	ctccatctat	gcttttgggtg	gacgggcttc	atcctttccc	aaggaattac	180
cacgggagga	ttggccgtat	ctccactctg	atcaagatcg	ccacgggtat	tccggctgcg	240
atactacaa	tatcatcaat	ctgggattag	cgtactcgc	tctgatcttc	ttggatggcg	300
tttcatggtc	aagacgggtca	taagcgttgt	cataatggcc	atttcatccc	gataggtgaa	360
gagtatctgg	tcgtcacgga	gatcgtcaat	gggtaaaagt	ttttacgcct	cttctactgc	420
cgaatgaacc	ggccttagct	cggatgatcg	ctccattctt	agcggctctg	gtattgcat	480
agtattctcc	tgaactccag	tacgggcggg	accgatatta	tcgtagccat	catgaacaat	540
acaagaacat	gtcgttcgga	cgcgccattc	tactgggtgga	ctgtaccata	ttttgtgctc	600
gtatctggtc	aatgtctaca	tcgccggcaa	gtcacctccg	acgctttcaa	cctgcttata	660
tattcggcca	tagaggttat	cctcgttcta	cagtcttggg	attggatatct	caattcgaat	720
agacagtccg	tgcaatcctc	atcttcagtc	tcaaaaacga	agagctcagt	aatgccattc	780
aagacgcata	aaaagggggt	gtaccctgct	ggatgcgaca	ggaggctatt	ccgccaacct	840
tgtaaagttc	ttgtggtcgt	tgcacgcaag	acacaaagcc	taccatccac	agaatcattc	900
aggagatcga	cccc					914

(2) INFORMATION FOR SEQ ID NO:1039

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 613 base pairs
- (B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...613

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1039

cagaaaaaga	gacggacgag	gcctacagct	atgcactgct	caatgtgcc	ccgacggcct	60
tcctcgcttc	gtagagctgc	cacggctcca	gaccgacaat	tttattacta	ctcttttctg	120
gaagatatta	tcaaagagca	cctggattag	tcttccccgg	atacgagggtg	atggacagct	180
attcgatcaa	agtgtccgcg	atgccgattt	gctgttggat	gcacagcgtc	ctgaagatct	240
gcccagagaga	tccgcaagaa	ggtgaagact	cgcaagctcg	gtgctcctac	gcgatcatgt	300
atgacgggcg	catgcccgcg	gaggtgctgc	gatacatctg	cagtcgtgcg	acatcgatcc	360
ggaggaggcg	attcggagtg	gaaactacgt	catctgcaag	atctggctat	gctgcccatt	420
ccgtttgccc	ccagactgga	gcactcacgc	cggagcctct	cctctcgaag	catttgagcg	480
aggccccctc	ctgatggaag	gcattccgta	ggaaggacta	cctgattcat	gtgccttaca	540
tacgtatgac	tatgtcgtgc	gcctgctgat	ggaagcggcc	atctaccgat	tgtgtcggaa	600
atacgcttac	aca					613

(2) INFORMATION FOR SEQ ID NO:1040

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 572 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...572

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1040

cgctgatacc	gaacttgctc	gagccgtatt	tacgcgcctg	atgctgtaca	ccttctcccc	60
gatgcgtccg	aaaccggcgg	atttgcccaa	atatggaagt	aacgggtgcat	atcgntgtac	120
aactcgatat	tctccactac	ctcgtgtggt	atgctttcaa	accacaatta	aaatcgtgta	180
gcttgatgcc	ggacagtttc	gggctgtagc	attgaaaagc	tttgagggca	gattcttgct	240
gaacaaggat	cgtaccgctt	acgcttccaa	ccgcttacca	agtcatatcc	ccctctgtca	300
ccatccggta	cagctccggg	atctcatccg	gactatcctg	caatccgcat	ccatcgttat	360
gactacctgc	ccctgtgtgc	gggcaaaacc	acttgagac	cggccgactt	gccgtagttg	420
cggcggaatt	tgatcccttt	gcctcgggat	gctctgcttg	caaacgttcg	atcacactnc	480

aggagccgctc gtacttccat catctacgaa gatgacctca taggaatagc catgctcatc
attacacgcc tgatccaagc aaaaagttcg gg

540
572

(2) INFORMATION FOR SEQ ID NO:1041

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 358 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...358

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1041

cggacgatcg	gaccggcaga	aaggccagaa	aggcaatgag	ggcagggaga	gacagtattt	60
catccggagc	ataaggagag	gtcaaaaagt	gaaaccgcgc	taactccata	acggaaaaag	120
ccggacttat	cgtctgtgcc	caccatcgac	tgaaatgaaa	agagaggtcg	ggagagatgt	180
tgaaatcgaa	caattcgcat	ccacataggc	atccaacatc	gtcaggaagt	agacaccgag	240
ggtaagatga	tactcaaate	cctgttgcca	cggtagtctc	cgtgccgcgc	ttgaacgagc	300
tttgagctgc	tcgctattga	cataatcggc	agggatcggc	ttcgtagggg	gggaaagt	358

(2) INFORMATION FOR SEQ ID NO:1042

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 902 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...902

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1042

cggttgagca	gtgctttcgt	ttcctgatag	agatacgtct	tattggccgc	cctcctcctt	60
tggctatgca	gagaaagtcg	tactccatgc	cgtccacgcc	atcaggtcga	tctgtgcggg	120
caggttgcac	cccgtattca	cctcctttac	atatccaaag	gagcattctg	cgaatagcgc	180
aggttctcct	gcgtatggta	tcatagacac	catgcgagag	ctgctcttcg	tcatgaccgc	240

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ccgtcagacc tgetgtccct tcttaccgag gatgatagcc gtgcccgtat cttgcagaaa 300
gggagctgtc cettggctga aacctccgca ttgcgcagga aagcaaagcc acgaatttgt 360
cgttttcgct ggcttccgga tcggacagaa tcgagccact tgctgctgat gctccggctcg 420
caaatagaag cgatgtcatg aaagccgtcg cgcaagtaat cgcaagagct tccgggtcca 480
ctttcaggac tcatgatcgc caaacttgtc cacggacaca tactccttcg tcagcaaata 540
tactctgtcg tatcatcccc catagggaaa ggcttctgat acttaaactc ggagttgcca 600
tagtaattgt aactattgtt attaaagtga taatcggctc tttttcggtc tcccatcgag 660
gacatttcct tatcgatgca tttggatatt tcctctgcgg aggcatttgc tatttcctcg 720
agacaaggca gacaggacag tcatgataat gtcgtcgaag gaattcgaag tgatgcgatt 780
gcagtgtacc gtccacagc cgcacgcac atcgggaaga tcatgaccgc acaaaagcct 840
ctcccacaac ggggacagac tttccggcgg tagtttcccg aagattcagg ctcatatctc 900
ag 902

```

(2) INFORMATION FOR SEQ ID NO:1043

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 601 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...601

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1043

```

cggtttttga ttagtcttct gtagccttgg ccaagaatat aatagtcggt atcttttggc 60
ttcaggcaga tttttgggtg atagcagacc tttatcggcg gtcttgctat caccctcaat 120
ttgtggcttt ttctcggttt ttgtcttatt cggaaaaaaa ctttatgtg tttagtagag 180
tcttctgtag atacctcgat ctcatctaca gtaagctcta cgtagttggt ggcgagcaat 240
ctttgtgtgt ctttaagcact gattccgcaa agcctcttac ctcttcgtcc ttcagccgta 300
ttcgtgcaaa ggtttcttgg taagaaggca tccgagaagt tcaccagctt cggatatacg 360
tattcgggct ggcagttcag tatcttggag agttccagtt gagttcgact atatagccga 420
aaggattctt cttttggtat atttgaatac ctctgtgaag aactgatagt ttgcttctcc 480
atgcggcacg gatagtgcct ccaacgggta ggatagtgcg tggacggctc tactccgcac 540
tccgaagcta taccggcata gttgctggcc atgatcattc tccagcttcg agcggattca 600
g 601

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(2) INFORMATION FOR SEQ ID NO:1044

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 527 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...527

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1044

atccggattc	ttggatctct	actggccggg	ggccgtcatt	ctgttcaatt	actgtcagca	60
ggtatttact	tcgccgttag	tgtccgaaaa	ctcaccatgc	taccgtggct	tttcctcctg	120
actatgggag	gtgaaacgat	tttgttcgca	tactgacatc	caatctgaac	ctgtacggag	180
aagatctttt	cactgccttt	tcttcggcag	tatcggttg	tgctattcg	ttttatcctt	240
tatcaccttc	aaagacgaca	actgaaatga	ctgctatact	tcaagcacia	tccaattcct	300
ccaaatatcg	gacacgatca	aggacaggat	tctctccggc	gaaattcggc	cgacgaaagg	360
gtaccatctg	tccgcgaatt	ggccgaacag	atggagggtca	atcctaacac	agcgatgcga	420
gctgtcgaac	gcttgcaaat	gaagggtatga	tctataacaa	gcgcggactc	ggctactttg	480
tcagccccc	gctcgcgaag	agatccttgc	ctctcgacgc	aagaatt		527

(2) INFORMATION FOR SEQ ID NO:1045

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 596 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...596

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1045

ccttacaggc	aagaaagccc	gtatcaaaga	gcgtcgcgta	gctctttctc	taaagactaa	60
tttgcttata	acggttatta	ggggggctta	tagagataat	cctcattccc	taagtattat	120
gcagagagg	tgtatcgaaa	attgattcgg	tacaccctct	tctctttaac	ccagattggt	180
cattagagat	taacgttaga	atcaaggcat	tacttattac	tttcaaggaa	aaagaattat	240
gtccgataag	catgtatttc	acatcacccg	attggtgaga	tgaaattggg	atgcgatgtg	300
atttctataa	gaaggtaagt	ggcagttatt	aagcagatta	caagaaaaat	ctctaattgac	360
ggccattagt	ttttttgaat	gcaatccact	ttttccatta	acataggctc	ttataaactt	420
gaaggattaa	gcctaattta	gctcaccaat	tggttggtga	gacccgggta	acacctctgc	480
ttgcaacaac	tcccagtcct	tcttcaagac	acgctcaata	agcttgagga	gaaaaaagtg	540
gactggctcg	gcgatagggt	cttctgnaac	aacagggtat	cgaatcctac	aaagca	596

(2) INFORMATION FOR SEQ ID NO:1046

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 563 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...563

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1046

cgggcgtatg aagatcaatc agtggactcg ttatctgact gttgctatTTt gattttacag	60
tctcttacct atttggtgaa cttgcgagtg caaatgcac ttaggagca tcatgcccg	120
gtggcctttg gttccagata gttgcggtgc tattcttacc ggtggtagta tgtttgttct	180
gtggttagga gagcgtttac agacaagggt atcggtaatg gtatttcgtt gatcattctc	240
atcggattat tgctcgttta ccccatgcat ttgtagctga gttcacatct cgcaaacgag	300
tgctgttgga ggtttggttg cttttcttgc tgagattgta ttcttctttt tgcatagcag	360
gtgcaatcct tttggtacaa ggaacaagaa aatacctgtg caatatgcga agcgggttgt	420
cggtaataag cagtatgggg ggcacgcaa tatatcccct tgaaggtaaa tgctgccaat	480
gtgatgccta catctttgct caagcgtga tgcattccg atctctatTTt gggatcgct	540
gtagatcagc ttccggggttc tga	563

(2) INFORMATION FOR SEQ ID NO:1047

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 421 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...421

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1047

cgcaatgctt ttcttgcgct gcatgagtag tgcacacagt ttattggcaa catgctttcc	60
gggtacgaat acagtagtat tgatacgttt ttgccagttt gcccacgaaa catttcgctc	120
gaatggatat atcctactac gtcattcttgn tctgtctgta gataatgatc ttggacaaac	180
cggtatcgat aaaagtgttt tgagtacttc aatatccgtt tgcaactcac atgctatcat	240
ctcatgcgtg ggatcatgca gtctcgacc tgaataccgg aaaaatccag cgcattctgga	300
tgattttcac ttccgtagtc aagtcgttct gttcgttttc tccgacatat tttctgcaa	360
ataatgatcg agatctacgc gcccacccc tatggtgtag gcacataatt cttgtccacc	420
a	421

(2) INFORMATION FOR SEQ ID NO:1048

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 958 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...958

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1048

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ccatcattgg ttacagtccc gcttttaggg ttaggcatca atccgcgagg cctaaaacac      60
gtcccaatgc accgatttta cccataatgg caggcatgtg atgatgacgt ctatgtcagt      120
cccaaccagc ctttattttt tctatgtttc gtcaagacct acatagtcag caccagcttc      180
tttagcttca gcttcttata aggagagcac aatgccagaa cgcggatctg ctttccagtt      240
ccgtgggaag cgttacaacg ccacgcacct tcctgggttag cctttcgggg gtctcaccca      300
agcgcacatc aatatccaca gatgcatcaa aattggcctg ggggatctct ttcaccaagg      360
ccgatgcctc cgatattgtg tatgctttcc cggttcaatc ttgctaaagg ctaacttctg      420
tttttttggt agtttgctca tttgagtaag attaaattat ttattcggga agtccocttt      480
aatcgcgata ccattgctcg agcagtagcg gctaccattt tcatggcagc tttgatatca      540
agcaattcaa atcgacaagc ttatottotg cgatcgtaag tacttgctcc atgtgatttc      600
tgctaccttc ttacgattag gttctgcaga accactctct gtttgctagc ttcaagggag      660
ttgaatagca acaggaggag ttttttagata aaatcaaaaag acttatcggc atagtagcta      720
attactacag gcaatctttg ccggctttgt cttgggttct ggcattaaat tgcttgcaaa      780
actctgatgt tgatgccctt tgcaccaagt gcaggcccac ggggggtgagg ggatagctgc      840
accacctttt attgcaattt gatttgacca gcaacttctt agcattgggc taaaataaaa      900
attcagacac acactatata aatgcgagag aaaagatccg aacacaacct catctttc      958

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(2) INFORMATION FOR SEQ ID NO:1049

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 373 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...373

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1049

cgggctgacg atcttcgata tgaacggccg tcgtgtagct actgctaaaa ccgcatggta	60
ttcgaagcac aaaacggcgt gtatgccgtt cgcacgcac tgaaggcaag acgtatacag	120
aaaagggttat agtgaagtaa ttcacacgca attctctata aggggctgtg ccgaggaatc	180
cattcggcac agcccttttg aattattggc actacgcaa gagactgttg agtaatcagg	240
cgagaaagag gatgctaaag gtcgtaaata acggctcaaa cccaatggcc cgttatctca	300
taccatgggtg cgcaagggtt acagaccata cacttgagat tattgccata gtgcttcgtt	360
ttaggtggag ata	373

(2) INFORMATION FOR SEQ ID NO:1050

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 469 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...469

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1050

aaagtgtttt aggctcgtac tccggagaca gtagttcaca agcatacaga gaatagcatt	60
gatgtggaat caaggatatct caatattgag agcggttcgtc ggtcaaaaga aacactctat	120
cttccaaaat tcaaattttac atcgggttatt gctgctcctt ttgcaaagtg gatttgacaa	180
atcgtatggg gagcaattgc ttagatgaaa aaaaggataa taggattagt ctgggttgcatt	240
tttttattta gttttgtggc tgtccgtatc atagagcagt tgtggaagtt tcgtacttgt	300
gtctaaggcc ggtagcgggt ttttgagact tcccttggtt taggtaaaac cggagaagaa	360
aagaaaacaa catancagta ataattttta gttaacgcat aagaaaagtc tatgaaaaga	420
atgacgctat tcttcctttg ctgctgacga cattggtggg ctatggccc	469

(2) INFORMATION FOR SEQ ID NO:1051

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1346 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...1346

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1051

tccgcaatat	ccgtaatcaa	cctacggcat	ggtcgggtgc	ttgccagttt	cgatcttttg	60
taaggaattc	ccgtctacta	tttcgaagta	ctccacttca	gatgaggcag	ggcattaagg	120
ctttccgtca	cccatcgcg	aacagctcgg	gtgtatgtgc	cggacggagt	gtgcggcttt	180
gtccgaggat	gcgagcatgg	atggggctat	ggcacgctct	tcgggtgccga	ggcggacgtt	240
gcggcactga	gtgcaagccc	gtcctcttca	cggatgatag	gacaggccac	gatctaacgg	300
gtaaagccaa	caggttcacc	atgctgcgga	taacggcgat	ttgtggaaat	ccttttctcc	360
gaaatatgcc	ttgtccggct	ccaccatcat	gagagtttgc	ttaccacctg	cgccacgcca	420
ttgaagtgtc	cggggcgatg	ctgccttcca	tcacttccgc	cacactgccc	agatcgaata	480
cgcgagtgtc	ggttcgggat	atacctcttc	tacggagggc	atgaatacgg	catgacaagg	540
gcttccgcca	agactgctgc	atcggcttcc	gggtgtgcgg	gataacatcc	agatcgcgtt	600
tgctggtgaa	ttgtgtagga	ttgacaaata	cgtttgcacg	caaagtgcgc	attcggctac	660
ggcacggtgg	atcagactga	tgtgtctcgg	tgcaaagctc	ccatcgtggg	gacgaggccg	720
atgggtttcc	cttcgcacga	gcattgtgcca	caaagtctct	gagtgaagcg	acggtgttga	780
atattccata	acggcattat	ttgttcttct	gttatgactt	tgggtataaa	tcctcgggga	840
taattttttg	caaaggaaca	gattatttgc	ggattggccg	gttgatagag	agacttttag	900
tggtacttta	gccttggtt	atcgttatgc	ctcaaaaatc	aattcgatga	aaaaagtatt	960
atctctctta	atggtattgg	tgctatcatg	ttttactgcc	atgatgccc	gtcgcaaata	1020
agtattcgtc	ttttgagttc	aacgccaaact	tcaatcattc	gccggccggc	accggtgcgg	1080
cagtgatctg	ctcgggtacg	atctgaatct	gcggatgcaa	ctgcatctgc	cgaactaccc	1140
gatgccttgg	atttctatgt	cggcatccag	cggagaagag	cttttggcag	aatggaaatg	1200
ggccgatcat	ctatgtgaat	catccgatgg	gacaaaagag	aaattgaact	tcggcactgc	1260
tgaagcccg	ttcaagcgat	gcatacagca	agttgctgat	tgcttcggcc	cggcatatac	1320
ccttctatag	gcaagcggtc	ggttgg				1346

(2) INFORMATION FOR SEQ ID NO:1052

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 578 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...578

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1052

cgtcaaaatg	catcccggat	ccgattgctt	tttcttatac	ctttcctgaa	agtgggaaaa	60
aagacctgtt	caaaagctgg	tagaaaagca	ttggagagcg	aacttctttt	agtacgagca	120
cccactgggt	ctggaaaaac	ggatgcacac	tcttgtgggc	ttctcatcaa	atcaaacaca	180
gaaaagcaga	cgccttatta	ttgctatgcc	cactcgtttt	acaacaaatg	cactagctct	240
aagcgatctt	cgaccttttc	ttctacaggc	ctgtatcatt	ccagtgcattg	gacaagaatt	300
tcagtagcaa	aatagacaac	ggggaaatag	cttttagagca	ggcagatact	atcataacca	360
agctcgctta	ctacagaccc	ctataacggg	atcaccatag	atcatctcct	ctcttcattg	420
actctttgtg	acgaggaaca	tagaccatta	cttttgcact	ggcaaatgca	tgtctcggta	480

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ttgatgaggc gatttctatg atcaatttac acaagctaata atattagtagt tactagaggt 540
ctaaaatatg gaaagtgccg atattgctga tgagtgcc 578

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(2) INFORMATION FOR SEQ ID NO:1053

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 758 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...758

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1053

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agaaccaccg atccgctcgg aagagctgtt cgccctcgacc gattttactc ctctgccgta 60
tctgogactc cctccaccga tatgctctgc tatgtccacg cggccgttat ctggtgacta 120
ctctgagtag gggtttggct ttggctcgtt ccaccgcgca cacaagcgta ttctttacga 180
tcgtttcatg gccgacaatc aagacgtcat atcgaacagc aacaacttct cttccccgaa 240
ctcctgaatt caatccgtcg gatgcttctg ccgtgaaggc agctgtggac gaacccaatc 300
tgctgggttc gatttgctgc ccctcgggtg ctcttcctat tcgtgctggc agcacctgta 360
caaatcatag actgtgcggc agatgtcgtg cggatgtcat ccatactaca ctcgaagatg 420
gcagatcadc gcatgaacaa agctcgaact gattgccacc caaatagccg agtatcaagc 480
catccottgt gcaagacacc gacagcagaa gaggccagcg atctcttggc cgagcttttc 540
ttcgaacgac tccacctata cgccggacgg caagctcatc gtcagtatat cgaagaggca 600
gatatagcgc gccgcttcga gtaggcagca tctctcaacc atttcttacc cttcagtcgc 660
tcgcccattc ctaagggatg gtgctatgaa atgcctaaat tgaattaacc gaagtatctg 720
tccggcataa gtgcatgtgg agaaggggaa gagatggc 758

```

(2) INFORMATION FOR SEQ ID NO:1054

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1079 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1079

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1054

ctccaacgat	tcggcctgga	tttgctgggc	gatatagtca	tggtgctctc	caccacttta	60
tccataatat	cgttagacaa	gagaaggaca	tccacctttc	cgacacttcg	aaaccgcttt	120
gcttgcgcat	attctgcaca	cgattcaaag	ttcgcgagcc	agtccttcgg	agcgaagctc	180
atctgtcact	gtaatacaag	ggctacggtc	agattgcctt	cgttggctac	gaagccatcc	240
cggaaatctt	ccgagacgat	ctccacatcg	gccaatccaa	gctctaccgg	agtcgggcca	300
cttccatccg	gaaagtgccg	gccttctcga	gggagcgtat	ctctcctgog	tcattggccgt	360
tacagcttct	gccaaagcct	tcatacattt	gcgtagcgtg	ggccgagtcg	tttgaagtcc	420
ggtttgattc	gtttgaccag	atacccatgc	tgtcatccac	gaatcgcagc	tctttcacgt	480
tcacctcact	aggatcagcg	gctgtacgga	ttcgatacac	ctgcgctgct	catcgtctaa	540
gccggtatca	tcagtgtagc	caatggttgg	cgtactttca	gattcacttt	cggcgaagtg	600
ccagcaccat	agacgaaatc	tgctgagcca	tctgcatctc	tgttccagtg	cacggtccac	660
ctgactttga	tccggccggg	ggaagacgcc	aagtgcacgc	tttcgtcttt	gcccgtcaga	720
tctcggta	gtcggcagca	tagaaaggac	tgatcggagc	catcagtttg	gatacggtaa	780
gcaagaggtg	taaagcgtct	gataggcaga	gagcttatct	tcggtcatat	ctctgcccag	840
aagcgacggc	ggcttgagac	gcacatacca	gttgctcaga	tttcggagac	aaaatcgctg	900
atggcacgac	cggcacgtgt	aggctcgtag	tgctcagttg	atcatccact	tcacgaatca	960
atgtattcag	ttcggaaagt	tccagcggtc	gatctccggc	ctcttggcga	aaggaatgct	1020
ttcttcttcc	ccgtaaagcc	gtccaaatta	gcatagaggg	caaagaactg	atacgtatg	1079

(2) INFORMATION FOR SEQ ID NO:1055

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 479 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...479

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1055

cgggctttgg	atctctgcgc	ttccccgggc	ggaaagagca	cactcctaac	aacatattgc	60
ccgaaggcag	tgtattggtc	agcaatgaag	tgatccacat	cgcgccaata	tactggctga	120
gaaacatgat	caagtggggc	tatccgacgg	tattgtcacc	gaagcagatc	ccgatagggt	180
gaaatccgca	ggagagcttt	cgacttcatt	ctggtcgatg	ctccttgctc	gggagaaggc	240
atgttcgtaa	agatgaggct	actcgatccg	aatggagcct	gcaaaaatgt	ggagtttggtg	300
ctcgcaggca	gaagcgtatc	ctctctgccc	catgggaaat	gttcagccgg	gaggtctctt	360
ggcatacagc	acctgtacct	tcaatacgct	tggaacgaag	acaatctggc	cttctctcatc	420
gatactttcg	gagcgagccc	ttggcttggtg	atggtctcac	cgatggcaag	atcggcctc	479

(2) INFORMATION FOR SEQ ID NO:1056

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 569 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...569

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1056

acggaattct gaaagtcggt atatatgtat tcgtgctgaa gottacccac catacatcaa	60
tctgctcctt tcattctgga ctcggtgagc ctgtcgaatg tgccgtatat gctgcttcgt	120
acaggaagca agcatcctgc tgacttactg ctattgctta ttatgaactc ggctttcggc	180
aagagactca aaatgcagaa aatgagtaaa cagcggaaag atccccacga aaaacatcgt	240
ttcctttggt gatagccact atctgtgtgg tattcatcta tgcgatacgc ctttctattt	300
gcaaataccta agtccgaact ataaggctcg tgccgatagc aatctttcta tcagaagcct	360
gtatatcctt cgcgtggcgt gatatacgac cgaacggaga gctcctcgtg tataacgaac	420
cggcctatga ccttgtagcc ggacgaaaga ggtaggcgaa ttcgacaccc ttgcctgtg	480
tcagaccttg atgtggagcc ggagtatgta cgcaagcgtt ttcaggacat aagggatcgc	540
gtatcaaccc cggctattnng ccttacgta	569

(2) INFORMATION FOR SEQ ID NO:1057

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 408 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...408

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1057

gataatagcc gcacgtccgt taagcacata ttgacgagac ggcaagtttc atcaacgggtg	60
tgccgactac tcgacacgat gcagagctga aagccggcac agggtaatcg tgcacggac	120
acagctaccg gaagagctgc gccatccttg gtgcggatca ttggcagga cgactatttc	180
gtcctgatcg agaagaagcc ggagtctcca ctgtagccag tggcgtcaat aaggacagga	240
ctgcttgccg atcgttagcg atcatctcaa gcaatatgat ccggagggtga aaattttatg	300
ctcaacagac tggacaaaga ttctgccgga atggtgctct ttgcaagaat aaagaggtag	360
agggggttgt ggtggacaag tggccaagg tctattggaa cagcggtt	408

(2) INFORMATION FOR SEQ ID NO:1058

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 1020 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...1020
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1058

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cgggcgcgaga ggtaaaaatt tttggaacca aaacgaaaaa tttctcgcgg tgttttcgcc      60
aaaacacgca cgcgaatccg accgtttttg gctcgtaact tccgacagta ggaagctctt      120
ttcatcggtt cgtgtagctc cttgtgaaaa ataaagatat gcccgaaaagg gaaataagat      180
tcggatttat taccggtaacg gcgcggaata ctctcttctc tttattatct ttgccggaag      240
cctgactttt ttatccttgc aggcaatcct aatgatgaag atactaccac acgtaccaac      300
gaaacggctc ccttgcgcac tgtcgactg ggggttgccg attgaccggc ggagcacctg      360
ctctcgccga cacctacgat gccaaagatt ataatccgtg ttacggggca cttatccttc      420
ggacgaggat atcaagatag aatggatgcc gtactcgatg tactgggtgc tcatggcata      480
gaggtgctcc tcccagaccg atagcaaact acaaccagat atttgcccgc gatgtggctt      540
tgccatcgat gacaaactct tcgtatcgaa cctgatagcc gatcgtgccg cgagtccgaa      600
gccttttcgc ccatttgggg ttgtgtcgga gagagcctct ggtacgcctt agcgaagata      660
ttcatgccga aggcggagac atcctgtata tgacgatatt cttttcatag gcacctacct      720
tcagaaggat tatcctcctt caagacggcc cgaaccaatg cacgggctgt agacttcttc      780
cgcgattttt cccacacaag accatcatac cgatagagct gatcaagcac gaccgatcc      840
catgcgctcg gtgctccacc tcgactgcgc ttccaaccc gtggccgcag cccgcgccat      900
agtctaccgc caaggattcc tgcactctga ggcttcggcc tgatcacaga gatatcggtg      960
gccggggacaa cctgttcgag ttacaccgca ggaagctata tgatgaatac caatatattc
1020

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(2) INFORMATION FOR SEQ ID NO:1059

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 643 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...643

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1059

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cctgcgagca tcggtatagg aataggagaa ccaatgctcg aaagatctgt cagtccggat      60
gctttccaga agaagtccag ccccggtgca tatcccttcc gaggttggag gctgtgccat      120
cgggagccaa cgtggtcagt cggaatttc tttgtcatag gcttggaggc gtagcacttg      180
tgtacgcgag ggtcgcattc ataggtcagg ttgtactgct gcgagtgttc gcgcttttgc      240
ggcacatgcc atgggagagg tagtagtcgc cgggggcggc atagcctcct gcatcaaggt      300
gatccggtc gaaggagaga gcttgtaagt ggctgacaaa cgggtaggat aatagccgac      360
tcggtaagtc cggaatatc ggcgcgcaat ccgctgtagc ggagatccga ttcgacagag      420
ggaagagggc ttcggcatag gtgccacaag gtgttctcgc agtgtgggta aggctgatga      480
tttatcctcc gaacagaaga cttggcttcg ctatatgtat aatccggatc cgtaggagac      540
ttcaagcctt aatccgagaa tcgaagcgaa ggcgatatt ggcatcgct ctacggtgcg      600
gaaagtgtc tctatgtccg ctcgatttca agctgggggt gng                          643

```

(2) INFORMATION FOR SEQ ID NO:1060

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 348 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...348

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1060

```

cggtgatatt catagtttcg atcatcacgg agctttttct catgcaaaaa agaagaaacc      60
ctgcagcatc tcaatgacag cctacatgtc ggtcacgagc tttgcttcgt tccgacaggc      120
tttctactta cgtggggggc gggcttntct acaactatgt cagtgccaat aaggtagtgg      180
ctaattgtca taaactcccg aacgcctctt tcgtaggcag atggtcggca ttgacgactt      240
actggcgctt ggatccctct catagagcga ctgctgagtt cttctcccg tctgtaatca      300
ttcttacggt cagccccgta cgtcatcttc gcgatggagc tgtggaaa                      348

```

(2) INFORMATION FOR SEQ ID NO:1061

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 795 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...795

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1061

```

ccgccggact gtaattatgt ccccatcgag tcgctggatc agcagcaacc cctgtcgtga      60
tcgaaaagct caaggcactg cccgaagtgg aaggctaccg ctgacgaccg ccttgccggc      120
ttcttcgggc cagagtggag ataacctatc gaccccggtta cggatcgtga gctgatcaat      180
gtggccgacc tcttctcgtg gacgaacact atctgaaagt ctacgacatc gagttgctcg      240
aagggaatac ttcgacgctg ccaccgaaaa ggacagagag atcatgctca gcaaaaagcg      300
gctaccgaat tggctcggct gatgaattgg aaagacggtg tcacggcaag aatatcatcc      360
tgacttcctt cgggcgagtg gtgattcgcg gttgtacgac gatctcatgc tccgccgtca      420
gcacctgagc ccttaccctg aaagctccct tccgccatcg tctatgggga cgattggctg      480
cattatctga gatccgcctt cgccatgacg atgccggct cctccatcgc gtgaatggct      540
cctctccgaa gccgatccct acaaggagac ttctttcctc ggtgtggaat ggagcttctc      600
agtcgcttcg aggcagccaa gacttttcgc aatacgacct cttcggcagt gtcgtggcta      660
tcctgatcgc tctgatcggg ctggtcgcta tgtgaatacg gaggtcaatc gccgtcgcaa      720
ggagctggcc attcgaagat caacggagcc ggagagggcg acatcttgcg actcttctc      780
cgctcatttt tcggc

```

(2) INFORMATION FOR SEQ ID NO:1062

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 905 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...905

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1062

```

ccoctagagc ttggcgcggt gagccctaca gcgtagctcg aagagccgtg agcgcagctc      60
ggtagcgtct acggcgtagc ccgagtcgct gtagggcgag ctcgaccccc ttccggagta      120
tattccgaac ggctataaaa caatgctatt tggttggagt aaaagagtcg cccgactcct      180
ttttatggaa gccgggggacc gattaaagcg atcggttggt agagcatacc gatcgaaaat      240
aatcactcgt tactttacag cgagtttctc tacgtaggac ttgccgtcaa cgacaccatg      300
actgcatagt ggccgcctcg agccgtgtaa acaaccgtgt tgcacccgct gccagacgac      360
gaccgttcat gtcgtagatc atagcttcgc ctggcaagtt accgtgatcg tctttcctac      420
aactgtcagc gtgtaaggct ttgagccggt acgtctgcc aacgaagtga attcaacgta      480
gcagtttcga agctgattct ccgttcgggt aaacaacctt tacaccgtac gtgtaaaaac      540
ggtagccaaag tccggatctc ggtaagtagt ctccgttacg cctgatgcac ctgtgtatta      600
ttacgataga tcgtataggt gtaagacgga gcgttcctga agtgattaca acatcatcaa      660
ggttgatcca gaagaagtcc gtacagcgaa gtgacggaag gcaacatact tagtaccgcg      720
aggcaactgt accgtttttg ataccagtg ccttgagcac gaggaccacg aatggcttca      780
ggcgcgtaac aactgtcttg gccgtcagca cttcttccaa caaagcgtgc cgagttggaa      840
gccgtcgtaa cccgtagaag atgcgtacac gggataatgc tttgatgcac aaattggcat      900

```


tcttt

905

(2) INFORMATION FOR SEQ ID NO:1063

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 933 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...933

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1063

aggatccccc	gatgataagt	gtgggaagct	cgccctctcc	cttggttcg	tcagggcctt	60
gcgaatttca	tccgcacgt	tacctgcaat	ctctattact	tccaacccca	tgacgatata	120
ttcatggctt	cgtcttcgc	ttgccactct	ttcactgtcg	tagaaagctg	tacgtcgttc	180
gagtcgtaga	acataacaga	ttgttcagcc	caaggtgtcc	ggcgattcgg	ccggctcctt	240
gtgatcttcc	tcctgtatcc	ctccatcgga	aatgtaggca	tagatcgttt	ggctatcatc	300
cagccgaagc	gatgagcag	gaatttggct	gcgatggctg	cacgacagca	taggtgtggc	360
cttgtcccaa	ggggccggat	gtgttctcca	ctcgtgcatg	acatctactt	cggggtgtcc	420
gggtgtgatg	ctgccccatt	gcggaatgct	ttgaggtcat	ccatggagta	cttgcccgtc	480
aatgccagct	agcatcacg	atcggggaca	tatgtcccgg	atccaagaag	aagcgatcgc	540
gaccgggccc	attgcgggtt	cttcgggtca	aagatcagaa	tactcgggga	agagtacgtt	600
ttacaaagtc	cgctccgccc	atggetccgc	ccgggtgccg	cttttggtt	tttccaccat	660
tgacgcgccc	aatactcgaa	tattgtcgca	gccttggtca	tcagcttttt	gtcattcatt	720
ccttctaatt	atgttaggtg	agattatata	ttaaattgcg	attgtcctgt	gaccgaagac	780
atctttccga	caaaggttaag	aagttccgtt	cagagcacgt	ggtttactat	attaatagat	840
gatctttcgg	aggtcaagct	ttgttctctc	ccocttaagt	gcctgcatca	agcttttgat	900
ttcaaaagac	aactggtcgg	agtcggggga	tct			933

(2) INFORMATION FOR SEQ ID NO:1064

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 275 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:

(A) NAME/KEY: misc_feature
(B) LOCATION 1...275

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1064

cggcggtgga	ggaggaagtg	gcggtggagg	cggcgtcttc	aacgtaggca	atccaaagcc	60
aagctctatg	acaagaccaa	tatccacgtt	acattcagga	tgtagcaggt	ctgcatgaag	120
ccaagcagga	agtgggaagag	atcgttcctt	cctcaagaat	ccatccaaat	acaccgaact	180
gggaggaaag	atccctaagg	agctttgctc	gtaggacctc	cggaacggg	taagactctt	240
ctggcaaggc	agtagccgga	gaggcgcacg	ttcct			275

(2) INFORMATION FOR SEQ ID NO:1065

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 2216 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature
(B) LOCATION 1...2216

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1065

gtcgatgatg	gcagcttctc	ccatcgaagt	gatgtagtat	gcaccttggt	aagcagcctg	60
tgtaaatctg	ttctactttc	catatttgct	gaatgttata	ttgcttgctt	gtcagtgcaa	120
agatccaanc	ccaccttcc	ggctcgtcag	cttactttta	gtcacacaaa	tgacgcgaag	180
tatacgagta	tggctctttg	agaatgatgt	atagcccat	gacgaagacg	aaccagccga	240
atgccgcttg	agtttgctc	cgtcaatata	ttgggagagt	ttcattccga	tgaaatcccg	300
atgatggcaa	aagctgttac	cgagaggaga	agccccagct	cgaacctgcc	ggattattct	360
ctcccagaaa	tcccagagc	gatttggtct	attgattaca	agtgaggtgc	cgatagcttg	420
tttcatcggt	aggcctccga	gaagactaag	gcagggatga	tcaagaagcc	tcctccggca	480
ccgacaagcc	tgtgagcgta	ccgaccacaa	ttccctcaag	gaggatcagg	gcataacggg	540
ctgtttcggc	ttaggggggc	tctgtgatgc	tttctcctgc	attttagcgg	tctgatcatg	600
ctgacggatg	ccgtaagcat	cagtacggca	aacaagacat	caggagcatg	ttccggtcga	660
tcgcaaaact	gcccggactc	aatacaactc	cggaatcgcc	ggtaccagat	aagctctcgt	720
caggaatacg	gcgaaatcga	tggcaggccg	aaaagcactg	cagtacgaac	gtccaccagc	780
gaacgcggaa	gtatgagata	ctcccagcca	cactggtagc	tcccacgata	aaagcgaata	840
ggccgtgccc	aagacagggt	ctatgcccat	cagatatacg	agacgggaac	ggtgaggata	900
ctccctccgc	caccgataag	gccgagtgc	agccgattaa	aatagatgcc	aagtaacctg	960
ctataagcat	acagtctccg	ttttatgatg	aggcaaaggt	catcatatcc	ggaacggcgt	1020
acagctactt	ggtcacataa	gggtgatgtt	gttacgccct	aagcgaacga	tgccggatct	1080
tccaattggt	tgagcagcct	tgatactacg	gccctggctg	gtcccaatca	ttagccagtt	1140
gttcgtgcgt	gatctgtata	gtattaccct	ccacgattcg	gctttctttt	gaatgagggc	1200
cagtaggcgt	tcgtccatct	tcttgaagca	atggcattca	ccgtatctaa	tagctcctcg	1260
aatcgcttgt	gatagagcgg	aaagatgtag	ttgagccatt	cgggatgctc	cttcataaag	1320
aggaaacctt	atcgacgggc	aagaaaagaa	tctcggcatc	gtcttcgatc	tcaccttcac	1380
cttgcttgtc	tcattgtgca	ggcccccaag	aaaagacatg	aacagctttc	gcctgccttg	1440
atatagtaga	gcaggatttc	tctgccatcc	cttcggtagc	gattaccctc	atgaccctt	1500
tgataacgat	aggaatggac	ggacatgtgc	attctcattg	aggataacgc	taccggcctt	1560
gtagacctga	ggatgccatg	cttatacagt	ttgtccacaa	gctcaggcga	agagcgaact	1620

cggatatatc	ttctatctgc	ttcataggag	caaacataat	aaaaoagtac	gcaaccgaaa	1680
gaaatggaac	gaaaagcctt	tcgctctatc	tcttcctgcc	gcaatttaat	gcttgcattt	1740
tgtttattct	tttttcctcc	atattaccta	aaaaggatga	tacataggcc	caaaaacacg	1800
agcgaaaaaa	aattcaacaa	cgaagatggt	actcggattt	tgatgtgggt	cccctgcgct	1860
ctgtacattc	cgtttttcaa	gtataagcac	agcagtcatt	ggcaagagaa	aagaattgac	1920
taattttgtc	ttccgaaaag	cattgctccg	aacagtgaat	tccccgtgta	ttgaagtggg	1980
caattaattg	aaaaaagaga	gtattatata	atatgccaca	catccataaa	ctaccgacta	2040
tgccccatca	cctgacataa	gcccgaacag	gctcctattc	ggatccttca	gcacagcagc	2100
gacagtctcg	atccgatccg	agattgtaga	gaggaatcgt	gcagctacat	cgaatccatg	2160
caaaaggata	gcactcttggc	ataggcccta	ccacatacat	atccgactgc	accctg	2216

(2) INFORMATION FOR SEQ ID NO:1066

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 488 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...488

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1066

cgagacccag	ctcttcgcca	gccgcggata	tgccaccctg	caagtcaatt	ccgcatctca	60
ggcggatacg	gcaaggaatt	cctccgtgcc	ggattcaaca	gatcggtcgc	aaagccatgg	120
acgatgtgga	ggacggtgtg	cgctatgtat	cagccaaggt	tgggtggatc	ctgacaggat	180
cgccatatac	ggtgccgcca	cggtggttat	gccacgctga	tgggtctggt	gaaaacaccc	240
gatcttatgc	ctgcggtgtg	gattacgtag	gtgtatcgaa	catttacacc	ttctcgactc	300
cttcccagaa	tattggaagc	cgtttaagga	aatgggtcaag	gaatttggtg	cgacctcgac	360
aatccggagg	aagcagctat	cgccaaggaa	gttccccctt	cttccagatc	gacaagatca	420
ataagccact	gttcgtcgta	cgggagccaa	cgacccgcgn	cgtgaatatc	aacgagtcgg	480
atcagatc						488

(2) INFORMATION FOR SEQ ID NO:1067

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 544 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...544

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1067

```

cggtaaatga aatatgaaac aaaacggtta aaagcacatc tttgtttatt ggattatcgt      60
acacaaataa gaaaattata gatatatatc tatcgaaaaa agattatcgg attgacaaat      120
cggaatttat attataataa atcctatgca aaaaatattt tcatttattt ggagtatat      180
tgccgatata aataggacat gagggaaata acggatattg ctgtagccga atctggatg      240
agtgattcaa agagcggctt gagactaaaa atgctaaaaa ctggctgaaa agtgaagcgc      300
ttttgccaac ggaataggag gaacgctcta tttcggcgtg gaaatcgcac gcgccggata      360
attggtgtac aggatattca actgacaatc agaaaattac agagctgatt gtggctcgta      420
tcaccccgcg tccggttttt ggtgcatccc cctgcaacag aaaggaaaag atattctggc      480
tgtcagagtg attccggaag acataactcct ttctactatg ttcacgatca tcaccatacg      540
cata

```

(2) INFORMATION FOR SEQ ID NO:1068

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 467 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...467

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1068

```

cgtaccgaca agaatgcaga gccggacaaa gactatatcc ggaagcatcc ttgccgatga      60
tagaggctca tccggatgag gatatgctat tctgacgag gggtacattt gtcggaatgc      120
cttcggagag atcgacaatc tccaacgggc ggcagcgact acacggcctc tctgatcgga      180
gcagcactga atgctgtgaa attcagatat ggacggatat cgacggcatg cacaacaatg      240
atcctgtgtc gtagacgtta cggcaccgct tggccgtntc cattttgaag aagcgcggaa      300
ctggcacact tcggagccaa aatcctccat ccgacctgta tcagccggcc aaggagaaga      360
atatccggtg cgtttactca atacgatgga tccgatgcac ccgggacgct gatttactg      420
gataccgaaa aggattgtat cgggcccgtt ctgccaaagg tggcata                      467

```

(2) INFORMATION FOR SEQ ID NO:1069

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 381 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...381

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1069

ggtgctctgc ttgtcttaag tgccaacaat attggatgat actactgcaa ggacatcctc	60
ctcgtgccta gctaaatcgt tgagatgacg tttataaagg cctgacggct aaagccaagc	120
agttcgcaga gtgcagcaat aggatactag gctctggctc tgataaacgg tgaactactt	180
ggcttcggag ttttttgtat ctgaatgccg taggtttctt ctgccaactc tacaagtagc	240
ttgtagcttg atgccctagt tcttctcgct tgagacgact cttgaggaca cgatttcttt	300
acgtagctgc tctaattctt ctttttcggt caggggtagc tcactctgggg ggattgggac	360
actttcattg ggactggatg a	381

(2) INFORMATION FOR SEQ ID NO:1070

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 495 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...495

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1070

attggctttc agggctctcta ataggagcct tgccgaatcg accntgctca acggatgacc	60
tctttgcgct cactcgtcca tggettatacg gcaactccgc tcctgccaga tggatgatat	120
gcctcactcc ttgcagtgtc togacctgat tcgccgtttg ggaacgtccc attcatattc	180
gttttcgttt cgtttgggcg cgtcaaaatg cgtatggagt aaccgtttcg cacaagttct	240
tccgaagtgc ccgtgcaacc atcccatttg cccggtaatc aaaacaacgt cttttgcata	300
aagaaaccca caaaattcaa tccgctaaga caccgaaaca aattataaaa tgggatgcac	360
aagaaagtgt acctcaatgg aaaaatacgc acaaaaagtt ttcaacaacg aagcggagtt	420
tggaatgatt ctaaataagc acctaaagaga gggggccatc ggagtaaaag acaagaaacg	480
gcttttcgag cgaat	495

(2) INFORMATION FOR SEQ ID NO:1071

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1177 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1177

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1071

```

cgtgcttgag aaccactgtc gcagcgtgga gatgtcggag acccgtacct tatggccggg      60
aatatttgcc atttgtgtac ggatttttac gctttgacgg agacggctta gaaagcttgc      120
tcaaggcgct tcacacctacc ccggtccggg cggattcccc cgtaagggaag ctttggcgtg      180
tatccgggag gtcgagtgca tgaacgcaaa ttttacggag gatatttggg gcctgtgggt      240
aaggagctgc gagattgtat gtgaacatcc gctcgatgga attgtttccc gggcttccgg      300
ctttatgtgg gagagggtat aaacggagat tcggtattcg aagcgaatgg gaagagacct      360
cggataaggc ggctactctt ttgaatgtgc ttgaatacat tccgtcggag ataaggcgga      420
ctataaatga taatgcaaga tatggattcg gattattcgg ataagaaagg cgtaagcgta      480
ttgatggatt attcgagatg aagggcatac gtaaactcgt tatgtcggcc ggttcgcgaa      540
tgctcctctt ctgttttctt tctcccgaa tcccgcttcc gagaaatagt gattgcggat      600
gagcgttccg ccggtttttt cgtctctcga ttggtttggc ctccgggtgaa gcccgtagga      660
ttggtttgta cttccggtag ggccatttga attatgctcc tgcggttgcc gaggtttttt      720
acagggggat tccttggtcg cggtaacggc cgaccgtccg gccgaatgga tcgaccagga      780
cgaggacaga cgattcgaca ggaggagct atggccgggt tcgttaagtc gtatgcagct      840
tgagagcgga attcgatact tccgcctcgg catggtatgc catcgccgtt tgaatgaggt      900
gttgaacctg gccctgatgc ccgggcgagg accgtacaca tcaatatgtc gttttgcgaa      960
ccgtatacag ggacttctc ggatattccg gaaaagagcg ggcgataacg ttcgtgaggg      1020
aacggcaaga ttgcccgaag aggtatggga tatgctcgta aagcggtttt tggaagctcc      1080
agagtgatga tcgtcccggt ttttatctc ccgacgaaga cgtgtccccg cattgcagga      1140
tatatgcaaa tttcccatc ggtttgtttg cgagagc                                1177

```

(2) INFORMATION FOR SEQ ID NO:1072

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 500 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...500

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1072

cggagaaacg	tatcgaacgc	attagacgcg	aagtagaaca	ggaggagcag	cagagctgga	60
cggacagtct	tcatcacacg	actactccgg	ctatcgcttc	gtatacgcg	aacatttggtg	120
gaaggtaccc	agcatctgaa	ggagcgaagc	tgcaaggcga	gacacaatcc	actcgctcgg	180
gacgaacact	ccgtacttgg	ctttgctcat	agccgtttgt	ttgctatcgt	ggttgggtttt	240
taaggcatct	tatgagcgac	gtcatacgcc	tcctgccgga	cagtatcgcc	aatcaattgc	300
tgccggtgaa	gtaatccaac	gtccggcctc	ggtcgtcaag	gagtattgga	aaacgcattg	360
gatgccggcg	cttccattat	caggctggat	ggcagggagg	ccggtcgcga	attgatacgc	420
gtcacagaca	acggcaaggg	ctgagccaaa	gcgatgcccg	aatggctttc	gagcgacatg	480
ccacttccaa	atagcttctt					500

(2) INFORMATION FOR SEQ ID NO:1073

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 576 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...576

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1073

gggacattcg	gtatgtatat	cccaagaaat	cgttcaagta	tgaaaaagga	aaactccgac	60
tatggatgat	ctggtggaag	ctttccttac	agcttcgtcc	agagtggagac	caactcgggg	120
ctgggggtatg	acaagaacgc	caatcacacc	tgattacata	tgccaaaaaa	gaagagaacg	180
gtacgaacac	gctgaatacc	gctgggccaa	ttatgacaag	attcataaca	aagatttggtg	240
gagcgcacat	ttacgtatac	atcatctgcc	aatgctctct	acacacctca	agtaacatca	300
atccgaccaa	gggtctcgtg	tgctgggtcat	gggtggaata	tctccgggca	aacggatcgt	360
ttggtctgat	cgcagtggaac	ccatgccaac	gggtagaaga	catcgtaatg	caagaaggca	420
gcatgaagct	ctacccgaat	cggctcaaga	atatgctgtg	attagcctgc	cgacggcagc	480
aaactgcaag	ctggtgttta	cgatatgcag	ggcagaagta	gtcgtgagc	ttcttcttcg	540
cacgaatata	ggctgaacgt	gcagcacttg	gctaag			576

(2) INFORMATION FOR SEQ ID NO:1074

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1464 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...1464

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1074

```

cggcaaaagc ctgttcgaaa aggtaaccct tttgtgaaat cgagtcgaac aggggtgtata    60
tcctttgtaa tcgggaatgt cttgggttcag cgcgcctagt attggcgagc aaagcctttcg    120
aatgattatc accatcacgt tgcgtcccgc aactgactga aacgagctgt cgtgtccgctc    180
gccaaatgat gaatggattg aataacttgc ccaactcctt ttcggaggca taaaaacgct    240
tttccccaat ccctgtttgc caatggtacg aatgatgctg tagggcgctgt tcagacccaaa    300
gccctatggt ccactttgtc caccgacaga ttggcataac tcatgtcata ggacgccacg    360
acttggtcaaa actgcctnct cgtatacccc atcgataaat gcaatagcgg caacgagggc    420
taccaacgtg aactgtataa tatgtaggct gtctttcgct tcgcatagggt gcgtaccggc    480
ttgaccgatg atatagccat accatagcag caacgaggac tatagccagc agctcatatc    540
cagtaattca ggagaagatg ccatatcagt cctccgcctt catggctgat tcagagaaaa    600
ccgtcgagga tgttcgtttc aagggtgatg gatagtaata caatcggcca gacctgcgcg    660
cagcccaaaa gcatttggca cgaaaaggctc cagtcgggtc ggattcgata agatcgcttg    720
gcacgaaaac tgaacgcaga aagctcaaca gaataaaaag ggcattcaaa tacaaaacgg    780
aagcgtgtcg aacctaaagg cctccatcca tgcacgccat acctgctcgg cagcatgtcg    840
gcaaaaaagc gatagttgaa gaggtagaac agtccacggg cataccgaaa aggaaataag    900
ccaatgccat acgataggca aaagcccacc actgttcggt cgtatcgtcc gcttacaat    960
attcatatct ctttgtgtgt ttctattcgg attggaggca gggagcgagg gtaatgaatg   1020
atttcggctc atatcccccc aattgagcct atttcatgat tcgggtgcacg atgtatccgt   1080
tgcaccggca ttggatctga tgtagtctgc tgctgcgcgg gatgcgggtc cctataggcc   1140
ttgtccggtt gtattcgctt gatcagggtg ccaaactctc tgctgaggat acggagaagc   1200
ctccgcgcac atctatcaat tcacggcttc cttgaatttc tcatatcgtg gtccgaaaat   1260
aaccgggtata ccatgactgc ggccctcgggt gtattgtgaa tgcctttgcc gaatcctcct   1320
ccgtaaaaagc taacttgaccg tagcgataaa tggaggatag gagaccgaag cttctacaat   1380
cagacaatcc tgccgggcaa tatcgctttc cgtagcttcc gaagtcgtat gaaaggccgt   1440
cgtatatgcg atatgatctg aagc

```

(2) INFORMATION FOR SEQ ID NO:1075

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 398 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...398

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1075

```

cgtccatcat gccaaagagca gcagaaacaa cgatacagaa gcccgtaag agagcaacat    60
attggggaggt gaagatttta gctttttcat ttgttcttcc tccaaaatgt ttaggtttca    120
tataagtgtt gatcagagggt gtcatacgtt cataattagg atggcgaatg acattccttc    180
cggataagcc ccgaattacg gatcacgacg gtcagcaaac cgatcagaca gccgtaaagg    240
atctgccgga cttggtcatc ggcgaagtca catagtcctg ggccatgaag atggtccgag    300

```


catcataccg cccgagaaca ggtggaacca cggagtggcc gggaggatgt tggggctggc 360
 caagtgcaga attacctgcc cagtagatc acgatgct 398

(2) INFORMATION FOR SEQ ID NO:1076

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 285 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...285

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1076

cggcgagtat gcattaaaag cagctattaa aatcggcttg aatatccacg ttttcatcgt 60
 tctgaagtcg atgagcagat ccgatccgct ttcgaatagc cgtaaagtat tggtcgaaac 120
 acgatgtggg aataaccaca cgaatcacct aaaacaagca ttagaggcct atgccccaaa 180
 tccgacttca ttcaagcgga ggatcaagaa atacgagatt ttattgcctg ttttgagaaa 240
 cgactgctga atccaaacac caagcagcct acaactactt gaccc 285

(2) INFORMATION FOR SEQ ID NO:1077

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 435 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...435

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1077

cgctaaaaat cccgtaaccg aaaactccgg ttacgggatt ttatttggtt ttagaaagag 60
 gtgggacttt caagtgtagg ttccagtagc aaatacctga gtgaccggcc gtaggtgcgg 120
 atctcaatgc gcttaccgaa catgacagat cgccatcgag gtgcattacg ccctctgtct 180
 cacgctcaat gatcagtttt cggccttata ggtgtccaga ttggagttgc tggtgatacg 240
 cttggaaaga gttgtaaaag caattgtgga gcttccaatg gattgaaagg acggtaataa 300

```

ctacatccat tttaccatcc tccaaatccg ctaatggagc gattaaggcg ttattgccat 360
actggggcgc attggcacca agtgacgagg aagctttctc ctcaaaggat ttgccgtcta 420
tcggtcaggt ttgga 435

```

(2) INFORMATION FOR SEQ ID NO:1078

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 813 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...813

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1078

```

gggcaacggt catgcagccc aaggagctgc cacaggcaga cggaagagtc naataagaga 60
gaagcagtc ttagctcag ttgggttagag cgcttacatg ataatgtaga ggtcggcagt 120
tcaactctgc ctgggactac gggggatagc tcagctggct agagcacctg ctttgcaagc 180
aggggggtcat cgggttcaatc cgatattctc cacgaaagaa aacaggcgat cattgacata 240
ttggagaaaa tcaaataaag aatttaagta gagcacaaca agcttaagta taccocggcg 300
gcaattgatt gccgggcgaa caaaagtaag taagggcaga cggggatgcc taggctctcg 360
gaggcgaaga aggacgtgat aagctgcgaa aactgcggga atcggcacat acgaattgat 420
ccgcagatat ccgaatgggg caccocgtcag gccaaaggcct gacacatgaa ttgatttcat 480
gagcgaacgc gggaactgaa acatctcatt acccgttagga gaagaaaaca aaagtgattc 540
ctcagtagtg gcgagcgaac ggggattagc ccaaaccggc tttgtttcgc aaagtcgggg 600
taataggact tcgacaaaag tttaatgata gatatagaga acctactgga aagtatggcc 660
gaagagcatg aaagctgcgt atccgaatat cgaacaatag acgacggagc acctgagtag 720
cgcgggacac gagactcctg tgtgaattgg cggggcccat cccgtaaggc taaatactcc 780
cgaggaccgg tagtgaacca gtaccgtgag gga 813

```

(2) INFORMATION FOR SEQ ID NO:1079

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 469 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...469

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1079

```

cggattcggc ggatttcaat gcattgggct ttgcagacac cacttttgcg cagcttttgt      60
ccttgagggt catgtgaaaa gcgatttggc tcagacactc ggttcgaagc ctcggtacgc      120
gattgttaca tgcagctcga acgctataag taataccgga gcgaatagat atattagccg      180
ataccgatcc cgatagatcc gtctggatct cgtgtcgggc gacttgaaaa tggctctcag      240
agtggagaag gcatagatgc cgttacggtc gtgtcccaat ctctcgggaa gaagtagaga      300
tattccgcaa cgactctatt cagcgtctgc gactctcttc gattttcaag agctgcctca      360
tgcgaccttt accttgcaag cccgatcgct acatccgctc cacgacttga tgggaagtaa      420
acggtatgaa atacaactcc accgtggcaa gctggacagt ttcgccga                      469

```

(2) INFORMATION FOR SEQ ID NO:1080

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 511 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...511

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1080

```

aaatacgaat tgatactccg gtacgtagtc ttttcggctg attgtcgctg ggcacatctg      60
gcatacctctt tcatcagacg actgaatctc tctgcgagtc gcccggttta attgaagtcg      120
taaccgtata tatccagatt tactgtgggt gtccgcccac accgccaccg cttccgcccc      180
gagtaacctt ataacttgaa tctcaggata atcatccagc atggtacgta tctggtcggc      240
cacttgttca tggagcggtt tctctcgttg cgtccggtaa gaccgatatg gaaatgatga      300
tattcgtagc attgtcctgc atggcgggcaa acatgctgga agctcggcct gaccgacact      360
aaagctcgtt ctgtcgattt ccggtatttc ttctcccaac tgtcgatcat acgaagagca      420
aaggctcgtg gcagattgac tccgtgcccc ccgcatattc tgctgaatt ggatatagcc      480
attgtcggac gaggggaagaa ttcggtttga c                                     511

```

(2) INFORMATION FOR SEQ ID NO:1081

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 375 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...375

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1081

```

cagacgaaga atttcctgct tcataccgct tcgctccaaa gccgatgctt tccatacaag      60
agtcgtaact cttccagacg ggtagccgcc tgttccaatt tcttttccga gccatcacat      120
cctgatagag cgacttggtt tcgctgcttg gaagtcgctc cagcgcgtat agatacgcat      180
ccccgcata gggaaaaaat ctgacgttcg gaagccttct tctctgcata ggtgcggttg      240
tcccggccga tgcgatcaga cgactgtagt ctgctcaag ggtcttgctt cgctttatgc      300
tcttgaggga tgcatacgct cttttgaggg ccatatcgct agtagccaca ggcgccttc      360
ttcattggat accga                                     375

```

(2) INFORMATION FOR SEQ ID NO:1082

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1018 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1018

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1082

```

gttcgccttc cggcagattc tttgtggttg agcaggcacc tgtcagtaga caaaaaggat      60
ggggaggaat acttgccgta atactttcat cggattctat cgctttgtcg gaatgatata      120
cgtctgcacg gataccggct cctcttcggt ttgagagctt ctgctttoga cactatgggt      180
ttcgtctctt tcttctgccg aaacggaaca gatcggacaa gcgcgccaac tttcgactga      240
tcacaagccg ataccgggtc cgttatctc tccttcgagc agattttcat tgttttcttg      300
tggaagagtt tgaggtgctg tgctcctgat ttgtccagac ggtctccacg gatacgttgt      360
ccaccaaagt cctttcctta ttggtcggca catggagccg gaagcgacag atcctccgat      420
cacgacacgg atcctgttgt ctagaactgt ttgctgaagc tgtacgtgaa gtccgtatat      480
gtaccgcccg atcggtgcca tcgtgacttt ccataccgat gttcagtcg gagccatcga      540
taccttgccc aaagcactgt tgatcattcc ctgagcatag ctgctgaggc attgtcaaag      600
ttgaacccac tcgattgcga agccaaataa gagcctgtgc caagagtcg atggcctgct      660
tggaacgctc ttccggcccc atacttgacg ttgggttttg atagagaagt cctccggtgc      720
ttcgacatca aacacaaatc catattcttg agcgtttctt tgacgatgat accaacatcg      780
aaatcacctt tctcgacgct ttgctaccgc tctccatcac atcggcacgt actgctgcac      840
tgctttgaag ttgacgtaag gctcttgctg attgccgctc catgtacgta gctcgatggg      900
tcgatagtga agacctgctt acccagcagc ggagcgtata gcgcatggtg ccgccaccac      960
tcatactgta ccgtccggtc aactcatttc cccgtaagcc ggcatagtga aagtcagt      1018

```

(2) INFORMATION FOR SEQ ID NO:1083

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 507 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...507

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1083

```

cgcaggacga agtcgttctg attcagcttc catgccagga agagggctga gtcaccttcg      60
caaattcggc cggttgaggt cgcaacggtc ctatcacgcg cacgaatgcg agccttttat      120
atccggagct atcagtatgg tcagagcaaa agccccaaca tggcggcata gaagacggga      180
gccagcgact cgaaaaatcc gtctccatga gcagaaccat aaagcctatc accaccgcga      240
gaccgtccac aggagctgca tcatcggacg accgcccatc atgaaaaggt gggaatgtcg      300
aagtcgtaac ttgctccgca gacagcaaac caaccggcca cgagagcagc agatacagaa      360
tgatgggtaa accaatcgat ccgtccctta tategncttc gatctctctt aaaagacatt      420
gctgtagtga attgcagtgt tgacatcttc gtggccacgg cttegncttc cggagacagg      480
ttgccttcgc gagataatac ttcatca                                     507

```

(2) INFORMATION FOR SEQ ID NO:1084

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1100 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1100

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1084

```

atatacctgct gagtggatt ggtgatattc accagggtat tgcttcgtgc cggcagcttt      60
ggcatcgctt gcagctttgg ctatctccgt ttcgctaaac catcgagcga gtctttgctc      120
cctacgatta ccgctgcggc attggtgctg cgatcagctt gttgccgaat tcggtcgtca      180
gcgaagcctc ttccttttca gttccatgag cttggccttg tctcggcac tcagattggc      240
accggacgga caaaggcatc gtaatactct tggatcaact tttgtccctc gggtcgatgg      300
cggattggtc actttcgtaa acggctttta cgcgttgga aagttgtcgt taaggtagat      360

```

ggcatcgctg	tgtgcagcca	aaaggggcca	tatttttctt	cgattttctg	tagttcatcg	420
ttcgtattgg	ctcccgtag	accgaagaag	acattggaaa	cacgtttgag	tgtctgtccc	480
gaacgttcca	ggctacgagc	gtattctcga	aagtgggagc	ttcggagttg	ttcacgatca	540
atcgatctcg	gccaactgct	gtcccatgcc	ggcttcgaaa	gcaggcagaa	gtgttcgggt	600
ttgattttgt	cgaattcggg	tgtttccatg	aagagagact	cgattgcagc	agaggattgt	660
cggagaggtt	ggcatctcct	ttacgggtgcc	gttacatgct	gtgagcattg	ccataatact	720
gattgcaaaa	acaaattttt	actcattgat	ggaggtttgt	gagatgaaac	attagtaatt	780
ccctagtcgg	gtgtagcctc	aatacttccg	gaatgagcct	gatgacggca	tcccgatacc	840
ggctttgaga	agaaccggta	tgtctgcggt	ataggctgcg	agaattcatc	ttcccgtcgg	900
agtgaacttc	aatcccgag	ataatggctg	acgcacaggg	gatctgcccc	atagccaaga	960
cgtatgcccg	gcattgagcc	atcggtgaaa	gtcgagagat	cgtcggattc	cagtatggtg	1020
cgatagtaac	gccgcacggt	cgtactgccg	gtgaggaaga	gcaccagcga	tggacgacgc	1080
cttgagcatg	tcacactgac					1100

(2) INFORMATION FOR SEQ ID NO:1085

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 445 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...445

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1085

cggtgtgtctg	ctttttggat	ggagaattta	ccctgaaaac	aatccgcata	aatcggaaga	60
gattctactc	gaaccggcca	accccgacta	tcctaccaac	atgtatcggc	agacaacgat	120
ttcgtcatct	gggggatcgt	aacctatgta	ttcataaaat	aagaagatga	tcggcctatg	180
tatgccctct	tagactcaac	aacttcttcg	tcagttgcga	aagggtgttc	gaccctcgc	240
tcggaacagg	cgggtcgttg	tcctctccaa	taacgatggt	tgtatcatcg	ctcgagcaat	300
gaagccaaa	cattggggat	agggatggga	caacctttct	tcaggtgcag	gacttgattc	360
gccggcacaa	tgtggcattc	ttcagctcga	actcattctc	tacggcgata	tgtcccgacg	420
aatcatgtcg	cttgatcgg	acttg				445

(2) INFORMATION FOR SEQ ID NO:1086

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1684 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1684

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1086

```

aattgtgtgc aatttccgat aagtatgcct acccaaggga ggaataccac gtcgatgtcc      60
tgcgagttct ggcaggattg atggtaatcg gcatccatct tcgggagaat acgttcctga      120
aggagtggct gagggtgcaa actttaaacg cgggtctatgc tgggaggcgg tcgtgcagcc      180
ggccgttcct atattctcat taccagcggg gcttttgtct tgggacgcaa atgagacgtg      240
gggagtttct atcggaacg aataccgcga ctgctgttac tactcgcttt ttggttccgt      300
tctattggct gtggtgtggt ctcaaggcgg atgatatagg ttctatcttg ccggtttttg      360
gcagggaacg tcattcgttc atctgtggtg tgggtgatgc tgctgggact ttatgcagtc      420
gttcctctgc tcaacgaaat attcgcaggt gcgaagccga tggagagaag gctgctcgta      480
aacgactttg actctctcta ccatattgct actgctgggg atattgtcca acacctacgt      540
tacatactcg gttacaaccg ctttttccct tttctttggc cggattattg ggatatttcc      600
ttgtgggtta taccctgaag agccatgctc cgcagcgtct ttaccggctc tttccttgta      660
cggactctct acgatttctc ttttctcgca agtcggtagc ctttcgagca cggcgaaggg      720
ctatacttct accgtatctc tctcctttga ttgttctttc tgctatcagt ctcttcgcgt      780
tcttgtttct tggggaggat gtggaggaaa attggcgcgg atcgggaaaa tgcgggggat      840
attttaggaa tctacttagt acacatcgct gtgctgaacg tgtgacaaaa atacttgtag      900
tgaccacccc cagcctgatg caatgcgcac gctcaacata ccgatccgtg taggattggg      960
tttcttcggt tcttggggag tgtgcggctg atgaagcggg tgccgatatg ccgctatttg     1020
gtctagatcg tccgataccg gttctattgt acccgtttct tcgacctctc tatatcgtcg     1080
cccgtttcag gacagacggc catccccttg tcatcgaaag acaagcgtga ccggcgcggc     1140
ttaccaaacg gatccggcga gcaggattgc ccactacaag gcatagggcg gtacatccct     1200
aatcaccacg gttcctgcac ctacctggca taagccccta tcgtaatacc acaaagaata     1260
gtggcattgg ctccatggag acgccttcgt gcaaatgagt ggggcgggat tcggattttc     1320
tttaataaag gcgcgaggat tgatcacgtt ggtaaataca caactcggtc cgggaatacg     1380
taatcttcgc atatgacacc actatacaga gaaacgttgt ttgcacctta cagcctcgcc     1440
ccagtcgtac ctccggcatt ataacgacat ctgcccgatg ttgcaattct ctccgacctc     1500
ggctccgcac atcaagtga gaaagtgccat acgcgtgtac cctgaccaag cacacaaccg     1560
tcttctacat cgctgtggga tggatcataa agacctgcta tcaattggcg atcaactttc     1620
ggcacgttct accgatgaac ggaatgaggc attcatctcc atctcgtcgt cacacagcga     1680
cagc

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(2) INFORMATION FOR SEQ ID NO:1087

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 856 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...856

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1087

tatgaaacct	ctgcattggc	gcgaaatgaa	agaggctgat	cccaatcgat	aacccttata	60
gatgctcgtc	ccagacaggc	ctacgaagta	gagcatatcc	gggagcaatc	agcaatgccg	120
gtggaggaaa	taagggcacg	catagggaaa	ttcctcacga	caaaccgata	tatgtatat	180
gcgccgtggg	gatgaggggt	atttcgcctc	gaacatcctg	agacaatgtg	gtttctcaaa	240
tgtgcaaacc	tgatcgggtg	ctatcgcttg	tattctacca	taacggcaga	ctacgttctg	300
ccggccaacc	tgccaccgcc	caacttctctg	caaaggatag	tcctcttccc	atacacagg	360
accggagggtg	gatgcctgtg	gcattgtcctg	tcggggccga	tcctcaagct	caaacaatcc	420
attgaccaaa	tagctgtagg	aagcagctct	gcattcctggc	taccgacccc	ggatttgctc	480
gtgatgctca	gcctgggtgc	acacgaccgg	acacaatctg	atccggcagg	agaccataag	540
ggcaaataca	aagtgaacct	cgaaaagact	gcttgcaagg	aggaaggccc	tgctgaacg	600
agactccatc	caaaggcaag	acattcattc	tcttcaggat	gatctggaca	aggctttggc	660
cacattcgta	ttggccaacg	gagcagagcg	atgggacagc	cggtgactat	attctttact	720
ttctgggggt	tgaatccatc	aaaaagcctc	acgccgtcaa	agcgaagaaa	gacatttggg	780
gcaaatgttc	ggtatgatgc	ttccgaagaa	cagcaaaggg	ttaggactgt	ccaaatgaac	840
atgttcgggt	tgggag					856

(2) INFORMATION FOR SEQ ID NO:1088

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 588 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...588

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1088

aagcaatgga	aatcattcgc	aagaaggac	aagcagtagt	tgcaagcgtc	ggacagagaa	60
gcggcggaag	gttgctgtact	cttcagccga	caaagacgat	ttgccgctat	cgtagctctc	120
aagtgcgaga	cttgatttcg	tggcaaaaat	gccgaattta	tcgagcttac	acaaaatata	180
ctcaataactt	gcttatgaca	agaagccggc	caacaaagaa	gagctgctcg	cccttcctct	240
ggctgcggac	gcaccatagc	cgaccacatt	accgatcgta	tcgggtgtgac	gggtagaaga	300
tgggaattggg	tgcttacgaa	tacatcagcg	gtgcctccag	cattcttata	tccacccggg	360
caacaagctg	gctaccgtgg	ctgcattcaa	cgagctatcg	agcaccagat	ggctcgtgac	420
atagccatgc	agattgcagc	ttgaaccccg	tggcagtagt	gcccgcagcag	gtcgatcagc	480
acatcatcga	caggaattgc	agatcgctcg	cgaaaagggt	ctcgaagccg	gcaagccggn	540
gaatctgctg	gatnctgtatc	gctcaagggt	gctttgcaga	atttctac		588

(2) INFORMATION FOR SEQ ID NO:1089

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 437 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...437

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1089

ggttttgaga atcgtatatatt cgtgtggtac gtctgtcagt ttottttagcg aagtcctgta	60
gcatcggtgc cttctccgaa caaatctgtc ggaggctctg tgccgtgtacc atgccggcaa	120
acaggctctgt cgcaggggca tcggtagtgt actctccaac cgtttcagca aagtgcgaaa	180
ttccagtgc gcaaagattc acgaacggct gccatatcgg gcgaagtacg tcgataggct	240
tcggatcgaa gacaatagga gcatccgtgc ggatagtggc caagtagcgc gagagcgcgt	300
ttgctcttcc ccttcctgaa ttttcttggc cacagctcct ttcattcctc ttggtgggcg	360
tatatgccgt ctatgcttcc atactcggcc agagcttctc agctgttttc gctccaatgc	420
ctttacatcc gggata	437

(2) INFORMATION FOR SEQ ID NO:1090

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 536 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...536

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1090

ctgatttgga gaggtactcg gatcatatag acaacaaggc aagccactgg ccaagatgct	60
caatgactat taccagaagt tcgatgcaca gaaggggaagc agttcgtttt ctctgattta	120
gggacttata agcccgagg agaattcatg tctattcgga gatcaaactg aagttggtag	180
aagactatca catccctcgc atgaagtacg ctttatccaa gaggcaaga acgagaaagc	240
caagaagcaa tggtggacgc catgaaccgt ggcgacatcc gcatcatctt cggctctactt	300
cgatgttggg aaccggggtg tcaatgccca gcaacgtgcc cgtgctatcc accaccttga	360
tacacctttg gcgtccttcg gatttgagc aagcaacggg cgttgccgtg ccgtaagggc	420
aatatgattg ccaaggagtt tcggataaca agtncgatgt gattatctat gccgtagaac	480
gctctctgga agtataagtt caatttgctt cacacaagca agttgttcat caatca	536

(2) INFORMATION FOR SEQ ID NO:1091

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 536 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...536

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1091

ctttctctct	tgccgaagag	tatttcgagc	tgtgaggtat	cctcttcacg	gagacagcga	60
ggatgtgac	gccgaatat	aggatcatat	cagaggtagg	atctcgactt	taccgttgtg	120
ccagaccgt	gtaatgacga	aagggcggtg	agcaggagt	ctacttcg	aacgctttg	180
ccatccaaag	caggatgcag	atttcatact	cggagaagaa	agctttggga	gcctcggaat	240
cgtctgttcc	tcgaccttgg	gcatacatac	tttcagcagg	gccaaagcaa	taatacaccc	300
acaacgcccc	aaggataggt	aacggcacag	gccagacctt	tttgctatt	tcggccgtgg	360
catcgggatt	gatctgatgg	agggtcgttt	ggctgcaccc	aaagcagggg	tattggtagt	420
ggcaccggcc	acgataccca	tagattgggc	atggaaatgc	caaggatata	ataaaggagg	480
atgcacagga	aaatgtgagt	aggactaatc	ccaaggagat	aagatctggc	aatgcc	536

(2) INFORMATION FOR SEQ ID NO:1092

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 538 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...538

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1092

ctgtgctaca	gcagcagtat	ggcctgatca	ccctgcagat	gggcttgggt	cggtggcata	60
tccggtcaga	atggatgtag	cagatctggg	cgatcatatcc	tgacgatatt	cacactcagc	120
tacttagctg	cctattatcc	tgtccacact	tcataaatcg	cagactgaaa	aatagctgac	180
gaaaggcctc	attcgaaatg	aggaccatgt	gcaaaaagctt	tggaataagg	tgtttgcgta	240
tatcaagttc	gtatctttgt	agcaaaggag	tgccggctat	gccgattaga	tgtagcaaaa	300
cgaactcgga	agaaaggtag	cacgatgaca	gacagtatat	ttatatccct	acctacaatg	360
agcgggagaa	cgtggccaaa	atgatagaaa	cgtcttcgct	ctacccaaaa	ctttcgatat	420
tctgataatc	gacgatggat	ccccgacgga	acggctgcga	tcgtcaaaga	gaaacaggcc	480
atctatcccc	aagacttcat	ctggctcgaga	gacaaggcaa	attgggtctg	ggtacggc	538

(2) INFORMATION FOR SEQ ID NO:1093

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 859 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...859

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1093

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aatatgacac tcgaacggct gcaaagtgtg gcagaaacgg gtgttgattc atcagcatag      60
gcgctttgac tcatagcggt acggccatgg acatcagctg aatttctctc ttactcaatt      120
aagctttaag ttggtttttg tatgcaacaa aggatattct taaggagata gaacttctca      180
agaaagaacg gaatgcatta ttttggcgca ctactatgca cgccctgagg tgcaggacat      240
tgccgttata tcggcgattc tcttggtctg tcccgtcagg ctgccgatac ggagcggata      300
cgatactctt ttgcggagtc cacttcattg ccgaaacggc ttcattattt cgccgcagaa      360
gactatcctc actcccacga aatacgccgg ttttctttgg ccgaagggtg ctctgctgaa      420
ggcttgcgtc ggtggaagga gagaaccogg gatggactca tcgttagcta tgtcaatacg      480
acctgccgag taaaggcttg gacggactac ttgcttgaca agcagcaatg cactcaagga      540
gtggagagct tgccctcgaga cagaaaaatt ctctttggcc cggatagaac ottggagctt      600
atatctcgcg aaagacagga cgggagatgg aactttgaat gcttcgtgtt tcgtacatga      660
gcgaattacg gaagaatcca tcttagggct atggagctgt atcccgatgc tgatattctc      720
attcatccgg agagcagggc tctcattcgc cagcagtgct gagtagcgat cgctgcttta      780
tgtatccacg gccggtatcc ttaatcatgc tcgggagtcg gacaaaaaaa tggtgttatt      840
gcgacagagc cggagacgc

```

(2) INFORMATION FOR SEQ ID NO:1094

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 871 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...871

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1094

cggccatgac	gaaatggg	cg	gctgcagtg	g	ccaatcatcg	gctcgggtctt	tgaccgatgc	60
ccagaaagac	ggcatcgtga	aagcctgcaa	ggaaatcccc	aaggcaagca	ccacgagcat			120
ttccccgtgg	atatgatcca	aggcggtcag	gaacgaccac	gaatatgaac	gccaacgagg			180
tgatttgcaa	cgtgcttgc	agatcatggg	acacgaggca	ggcgaatttg	cccacctctc			240
ccccatgac	acgtgaactg	ctcgcagagc	accaacgatg	cttatccgac	agcttccacc			300
tcggccttta	cgctacatat	ctgaagttcc	gcccccatct	tctgatctca	tcgagtcgct			360
gcgtgccaa	agccgcgaat	ttgcccatgt	accaagatgg	gacgtactca	gctcgaagat			420
gctgtgccta	tgtctctggg	aagacgttcg	gcggatttgc	ttccatcttg	caggatgaaa			480
tcaaaaatct	gactttgccg	ccgaagagtt	cctgaccgtg	aatatgggtg	ctacggctac			540
ggcacgggta	tctgcgcccc	gccgaactat	gccgaatact	gcatagagct	cttcgtgaag			600
tcaccggctg	ggacattcgt	ctcagtgccg	atctgggtggg	gcaacgagcg	acacttccgt			660
gatggtagga	tattcgtctg	ccttgcccgt	atctgtgtga	aggtgaacaa	gatttgcaac			720
gacctgcgtc	tccttccagc	ggtcctcgtg	cggtttgcac	gaattcaatc	tgccctgccat			780
gcagcgggtt	cgtccatcat	gccgggtaag	gtgaatcctg	tgattccgga	agtatgaatc			840
agatctgcta	taaggtgatg	ggcaacgacc	t					871

(2) INFORMATION FOR SEQ ID NO:1095

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 597 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...597

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1095

tcgcgggtag	ccttgttctg	tttgacatcg	ggaaagctga	cggcataaaa	gccgtttttac	60
cgtcggggaga	caaggccatt	tcgctcacc	gcgacaggtc	atgaatagtt	ccggcggtcaa	120
atgctctccg	gtattcgttc	cggctgaggg	gtcatagcag	ccgaaccaat	gatgcttgca	180
gccatcatcg	aaaagatttt	ttgttcattg	tggtgattta	ttactgtatt	gcgtttttatt	240
gtggacgaaa	atacgaaaga	aactcgttat	ccccctcttt	aacgagagtt	gaattatag	300
agaacaaggt	ttgtcggata	aaagtgtacc	gcccctgaat	gaagcatcga	tgcaatcgt	360
atcgggtcga	taggcaagac	tcaatatgct	atgcttctgg	catacgaata	tcttcacgta	420
aatccttcat	tacagtacgt	ttgaagaata	ttcatttttt	taccggacag	caataaaaag	480
aatggatcg	tctcagccgg	aaaaagtttt	tctgcagtac	agaaaaagtt	gaaagctatc	540
tgcaatcttt	atcaaaggtt	tcggatatat	aaacgaagct	ttcggatagt	atccaa	597

(2) INFORMATION FOR SEQ ID NO:1096

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 505 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...505

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1096

```

acattggcta agaaggaaag gctctgctct cctcctgca agctgctcgc gcaggagaaa      60
tgcgacgttg tacgaccggt ttttctcac gttcaggcta gaggaggctt tctcgatgaa      120
ggattggact gcatctctcc ttaaccgcca atgagagaaa gcgggatgaa atagtcgtga      180
ctgagccgga tatcgatgat acggcttcaa gcggtgtacc acctaatttg gtcagattct      240
tgcggtctgc tcttcacga acccggtgtg caggctcgtg agcagctgtt atcgagcctt      300
tgcagatggg tagcagtcgg cctctatcga gagagagaag ccgccggaac atccgtcaag      360
gtaagagata cgggaatgag gcgaacggcc gattgtcttg cgagagagct ttctcgaaac      420
ggatgtcgta attgcggaat agtttgttcc cgatacgatg cccgcaggat tgtcacttgn      480
atgctgncgn gggtaaaacc acatt                                           505

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(2) INFORMATION FOR SEQ ID NO:1097

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 458 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...458

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1097

```

aacgaatacg gcatcttact cccatatccc aatcgatatca gaaccgtaga tattcgtctt      60
cgatgcgag tatcttgcc atttttcccg aaaggcccg acctcattgg gctggttcat      120
ataagcatgc gaaataccca tacctgtgcc ttgagcagga tatgttccaa tgcctcccc      180
aattttatcc attgcacacc gtattgttcg aagtggtaaa caaaacaaaa tgagaagagg      240
aggcttcttt cttctatcat ttctattctg tgacttctca ttaatgangt cggataaatg      300
gcctttgcaa tgaagcgaga cagattgggt gcaccgaata cggatagctg agtccgtctc      360
tcgttgcatc ttgatgcttc ttgntatagc gctccattgc tgcaattctt ctttgaactt      420
ttgctccatt gtatgctgtg ctacaaacct ttccgaat                               458

```

(2) INFORMATION FOR SEQ ID NO:1098

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 936 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...936
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1098

ctgccgtggt	cataatgtcc	atcgacaaga	tgaatggtga	taccgctttt	ttttcccttg	60
cagcaaggac	ggcttcgtgt	acgtgatgtc	cgtacattct	tttccgccga	acttgggcaa	120
taatgcagga	tggatattga	ccgaatctgt	cggggaagga	ttccaagtag	ggtgcggtta	180
tataacacat	atagccgcca	gcacgatcag	gtctatccct	aattctttca	agagggcaat	240
gggctcgatc	cttcgagcat	ctcttgggta	gtaaacgaat	aagccggtat	tttcgccgat	300
gggcacgtgc	cataactcct	gcacgagagt	gattgctgag	gatacagcca	agcttgccga	360
acctcttttg	gcaaagaaat	gacacagatt	tttgcatttg	agccattacc	ggaagctaaa	420
accgctactt	ttctcatttt	attactatct	ttgctgcaca	caaagagtgt	gattgtgcag	480
attttctggc	ctgataatgg	actaacacgg	tattttctgt	gctaaatccg	ctaaacagcc	540
taaatgaagc	acaaatataa	gtaagaagat	tattagtaat	aaccatttaa	agaacaagac	600
tatgtctgaa	gtagaaaaaa	aagtgatcga	cctcgtattg	acaaattgaa	tgtagaagct	660
tctgaagtaa	cgcgatgaagc	cagttttcaa	atgaccctcg	gagccagact	ctcttgatac	720
agttgagttg	atgataatct	cgaaaaggaa	ttcaacatgt	ctatccctga	cgaccaagca	780
cagggatcaa	gactgtcggc	gacgctatcg	actatatcga	aaaaaacctg	aagaaaatac	840
tccgatggaa	ctgaaaagag	tagtagtaac	agggttagga	gcattactcc	gcttggcaac	900
tctgctcccg	aaacgtggga	aagcttagtg	gaggca			936

(2) INFORMATION FOR SEQ ID NO:1099

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 452 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...452
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1099

```

gccataacctg tccgattggt gcggtgttag tccaaacgct gaatacaact ccgcttgga      60
tgtagtactt ggccgtagtc aatttgatca cgccgttgat ggtagctgac gagtcgtttg     120
tacaagccct ttgccatagc tcttttgcgc atcagtagac ccctgtccat atcctgcagt      180
gctccggcta caatctcgag gaagatgccg attgtccatc gatcaggact actatcggga      240
gtttctgtcg atcgggttcag tcaatgtgcg aaatacggac gccgactntg caatcgacct      300
ttggtcgta ccacctcttt gcccttaggg acgaacagat tgatatctcg atagcagcct      360
gcatcagtc gccaccattg ccttcttaaa tcaaaatgag accttctgct ccttgtttgt      420
nacgaagatc caacaaggcc ggcgcacctc tt                                     452

```

(2) INFORMATION FOR SEQ ID NO:1100

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 349 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...349

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1100

```

cgaaatccga gcttttcgtaa caaaacaaaa aaaccttgca gaagttagac tgcaagggtt      60
ttatttgga tttgatccgg aaaggcacct tttgagacgt tatacaataa cccttcccc      120
ctcatattga tcaagacaga taaatgcttg atttgacgaa gaaaggagag cttcatgcga      180
tctctctgca aacctcagta atctgaaaaa cacttaagaa tcaactctgc ggcaaaagac      240
ttcaagaaag tcctataaaa tagttgcaaa tagctgatag ttagcgcatt gacggagcag      300
aatcagctga caattgcgtc ctgcacgtg caggaagcca ggacaactg                    349

```

(2) INFORMATION FOR SEQ ID NO:1101

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 389 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...389

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1101

tcagacgctg	ttcacgagag	agttcgtacc	gaccgatgag	cagattgcgc	gggcggaatc	60
tgcatcgagg	acttcggcca	gcacattttc	gaacggaggt	gggggcgttt	ggccgcttcg	120
gctctgaggg	cttcggtgtc	gaggccgctt	tgttttcgat	gatgcaggcg	aaggctcctt	180
gccggcgccg	gtagcttgcc	acgtgccgaa	gagggtgccg	aggaggagaa	gggatttgat	240
gaagaataga	tgagtccggc	gactaccggt	accaacaggc	cgttggagac	ccaaacatga	300
cgttggacaa	ggaagttcat	tgggaaagta	ttgttagtga	agtgttcggg	cgtgggatga	360
aggatcccg	tcccgatc	atgattatt				389

(2) INFORMATION FOR SEQ ID NO:1102

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1277 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1277

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1102

tcccctggat	gccatcttgt	atgctaaaga	aacagcttca	tgcatcgaga	tgcatctgca	60
atccgcgaga	tcttgccatc	gaagaatttg	tggagttttc	attatctatg	cccaaaaaga	120
tcagtcacac	gacttttagac	aataccaatt	ctctatatct	gtatagtcac	tgctttgttc	180
tgtccccccg	agaatgggat	tactctagtt	ttcatgctct	ctagagcata	ccaggtagaa	240
tttacttcgt	agctttggag	tcattgatat	aatcgacacc	ctttacgcga	gcaacttttc	300
cagtcgatgc	ggtacattct	tgaaatcctg	caaggcttct	cgatagcctc	attcttaata	360
tccatagctt	tggcagcaat	ggcagttgcc	atgcattgtg	cctgttggtc	atgccggaca	420
gagctaaaag	ttcctcatcc	aaacaaaagg	tgaattaaga	ttcatgacaa	ccaattcggt	480
cttttcattg	tccaagcagt	tgtattatcc	gttcgagctt	ccattgcgaa	cggtagaagc	540
gggctacagg	aggatgttcg	gctacccatc	ggctgataaa	aggatcatct	cccagtagat	600
gaagcaatcc	tcgggttgct	gattccgagt	gattctcttt	tcgcttctgc	ataaagctcg	660
aatcggtgat	cgtatcgatc	taaatgtccg	gtgtaatat	gagcagaatg	gccacattag	720
ccctgaagtc	gtacagttgt	ccagttgaaa	actgctcaac	tctattacat	aataaggatg	780
aggacgtaag	cgacctgtct	ggccagacta	aaaccgacat	tgcttgccaa	accacatcca	840
aaccggcctt	cgagagcggt	tgatacaacc	acatggttgt	tgtgtcttgc	cattactacc	900
cgtgatgcac	accataaatg	catcggtgta	agtcggcgga	actctatttc	cgaaacgata	960
cctatctctt	tggcaacagc	tgtcgaataa	taggagcagt	gtcgggaata	cccgggcttt	1020
tgataatttt	tttgcttcga	ggattatcgc	ctctgtgtgc	ctaccttctt	cgtacggttg	1080
gcataatcgt	taagttcttc	cttgattttc	ggggctatct	ttccgtatcg	gatacaaaata	1140
catgcagacc	tttggcttga	gccaaaagag	ctgctctact	ccgctttctc	ctgctccgag	1200
aacaactata	tcatatttca	atcgccatc	ttcccagatc	gntattttatt	cgttatcgca	1260
tcttgagtgt	tgcttng					1277

(2) INFORMATION FOR SEQ ID NO:1103

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 628 base pairs

(B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...628

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1103

acttgatgtc	ttcgatcgtg	tcgtagatat	agataggtac	ggatctctag	ccacgggttc	60
cgcttgcttg	cggcagccac	gctggacgaa	cctggaatcg	atgataatag	cagatgaagc	120
tgctgcgagc	accacatccg	attcggaatc	tgccccacaa	ctttgggaat	gccattacct	180
ggatttcttc	tgtagaaaagc	ggaataacca	aatcggccaa	agcttctacc	gagccgtcca	240
cgcccccttg	acaatgaggt	tcagctcttg	gaagttgccg	attgcacggc	gacgctgatg	300
tcttcgagcg	tgagtatctt	gtgtgtacgc	aatccctgct	cacctggagt	tgctctcggc	360
ggttagctat	ttcgcgagcc	tcctgctccg	tccaataaca	ttgaaagtat	caccggcagc	420
cggcgcgccg	ttcagaccga	gattagtacc	ggttcggacg	gtcctgcctg	cttcacgcgc	480
tgattccgtt	gttgaacatg	gctttgatgc	gtccgtgaca	ggtaccggcc	agaaccacac	540
gcccataatn	agcgtaccgt	tctgtaccan	gacagtggag	acatnnccct	tcctttgtcc	600
anagaagact	cnatgatcga	accgangg				628

(2) INFORMATION FOR SEQ ID NO:1104

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 414 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...414

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1104

ataaaaaagct	cacccatttt	taccgtctct	tcgacaggat	angtcactat	tcgtaatgca	60
accccaaatc	ggcaaatcga	tagttaagt	cagcatcaag	ggaatgtcgc	gagtctgtag	120
catggacttg	gtctgcatat	ccgtcacccg	atagcagtat	gattgatagc	ctcggctccg	180
gcataaacac	tcagcaaatg	agattgccaa	gcgtgtccgt	actgcaacgc	aaacgagtat	240
gttccgaccg	gaagcctcac	cgaaacccga	gagatagaat	tcaggagacc	ttcctccaca	300
gaggaagtct	tactgaaagg	atgggacatg	ctgtcgatcc	gatggagaga	acaagcaaag	360
cactatcggc	gaaggcgaga	ttgcgttcgc	atctttgact	cggcctgccg	gcta	414

(2) INFORMATION FOR SEQ ID NO:1105

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 424 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...424

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1105

```

ccgcgacgtt gatccttgct gtcactgtct acatgtgcgg catgaaccat atctctgtct      60
gggcatgggc gtatcgggtg ccaccctcgt ggtgtggcaa cgttcgcgat gaaccgcaag      120
tacggagaac acgggctgat gaaacgggag ccgctcgccg gcacccccgt tacctgctct      180
ctcgccgtcc tgtccgcgta ttctttccgt ccgggctgta acgacaaacg aaccgacgcc      240
atgagaatat ccgtaagaaa tgcgaactgg aagagaagtt cccgctgctg gccacgagaa      300
cggctgcata gtatcgaaag atgccgacat caccgtggct ttctcttga actgcccga      360
ctctttaccg tgacctcacc cgaatacgcg gcatgcatgc cgctggcac aaggcgggtga      420
aagg                                              424

```

(2) INFORMATION FOR SEQ ID NO:1106

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 415 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...415

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1106

```

cggccaagct gatcaaagct cctttggtgg ccgaatcgcc ggtcagcatg agtgcaagg      60
acgacaggtc attccactcg gtagccatga catgtttagg ccgatgtggt caatatccgt      120
gccgacgaac aatatatcaa cccggagcag gttctttcga tatggagaaa gcaaacctgc      180
tggcatattc gcatgggaat acttctcgct tggggacttt ctgggctatt tcggctggtc      240

```

```

ggtcagaaaag acaaaacgcc tgtcagacgt cgtaagtagt acattcagat aaactaatag      300
taacgtaaac atagaatgaa tatgaaaaaa ggaacagtaa tcacattgcc atattgcagt      360
ttttgtcctg ctatttagct gggggtgtgc tcaatacaac ggcttcgtgg acaag          415

```

(2) INFORMATION FOR SEQ ID NO:1107

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 902 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...902

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1107

```

ctggagttgc tggacaagga tacatccggc tctcaagtaa cagcccgtag aaagccatga      60
tatgggcttc ggactatgcc acattatcag gacgctttag agagaaacgg gcgaaacatt     120
cgattccggg ctccacgttc tggtagtgta agtgtatcct accatgagca atatggacta     180
agccttcgca ttctggcata gaccctcctt acacaatggg ggctatggct cgcaaacgca     240
aagagtcata gaagaactgc gccggcaagg tctatacgac ctcaatcgca gccttcacct     300
ccccgcccc cccaacgcat tgccatagtc tcatccggtg cagtgcgggc ttcgaagatt     360
tcatcgacac ccttagccat tcggccgagc attctgtttc tatcccgccc tcttccaagc     420
cgtgatgcaa ggagcacaaa cgaagcatcg gtgttgggag ctttggagcg catcgcatat     480
caccgggatt ttctgatgta gtggtcatca ttccgggagg aggagcagtg agcgaactgc     540
agctttcgac tcgcttgcca tcggacaagc atgtgcacgc ttccctctcc tatccttacc     600
ggcatcggac acgacaggga cgagacggtg gtggatcggt agcttatcgt tcgctcaaga     660
cacctacggc tgtggccgat tttctttaa ctgccagcgc gaagagtgga aattgatcga     720
cgaccttcgc tcccggctgc cgaaggactt cgaatgatga tgatgtactg ccacgaacgg     780
ctgatcagct atcgctccgn acaccggcca tactgaaatc atctgttcgt gaaaacacca     840
tcggataaag tccgtagaag atcgcatccg attagccggt aacagcggat cgccttcgga     900
ct

```

(2) INFORMATION FOR SEQ ID NO:1108

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 722 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...722

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1108

```

ttttctctga taaacgatac gaacttgggc gatgtcggac gctatcgtac aataagaaac      60
tcaatttgaa tattgatcct gatatcaaag tgcttgacaa tgaagatatt attgagatca      120
tcaagtatct tattgagtta gtaaattcaa ggcattcagta gatgatatag accacttgtc      180
gaaccgtcgt gttcggctgt cggagagcag ctttacaacc aatttggtat tggtttggcc      240
cgtatgccag gacagtacgc gatcgaatga atgttcgcga taatgaagtt ttcaacctat      300
cgatttggtc aatgctaaga ctatttcctc cgttgtgaat tcttctttgg caccaatgcc      360
ttgtcgcagt tcatggatca gacaaaccca ttgctgaaat aacgcataag cgacgtctgt      420
cggcattggg ccccgagggt catcgcgcga acgggccggc tttgaagtgc gagacgttca      480
ctacacgcac acggtcgtct atgccctatt gaaacacctg aaggacctaa tatcgggtcta      540
tctcctccct ctgctatac gccaaaatca gtgatttggg ttttattaaa caccataaccg      600
ggaagtaaag aacggcaaag tagatttctc cgacaatgac tgaaatacta cacggcagaa      660
gaagaggaag agaagaccgt agcacagggg aatgcgcctc ttgacgaaaa tggtcgattt      720
gt

```

(2) INFORMATION FOR SEQ ID NO:1109

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 529 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...529

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1109

```

gaccgctcct tcgaagccct cggacagggc aacctcgagc tggccgagca gcaactccgtc      60
aggccatcaa agcctatccc gacttgcctt ccggctatcc ctgatgaaca acctcgggtgc      120
catccagcag agacagggca agccggagaa gcgctgctca cctacagcgc agccctgcaa      180
aagctccctg acgacagctc ctgcgcacga acagagccat gtccttgacc gaaatgggac      240
gaacgacgaa gccatattcg actacaacga actactcagg gcagagccgg acaagaggat      300
cttccactac ggcagagcca tgctctatct ggccaagatg gtacggcgat gccgagtcgg      360
gatctgggaa agaaatctcc cgcgtcaatg accctcgctc aaagcccgtc tcggcatcgc      420
cctggtggca acgatgaagg caatacgaca aagccgaacg gctctacacn tacgtgatag      480
acaaactccc aaaaacgcgc cagctacgaa gggcgcgcgc gctcttctg      529

```

(2) INFORMATION FOR SEQ ID NO:1110

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 527 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...527

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1110

cgcttcgcgc	ggtttgttcg	ccgcgcctt	cgctcggagt	ggagggagag	tggtgtcatc	60
tactttctga	ccgttgcggt	agacagccaa	acggatatgt	cagctacggc	tgagagcgtg	120
ttattgatat	agaaacggat	tctgggcttt	tgaggatgga	ggcattcacc	tctttctccg	180
ttccacata	cttgaggaa	cggacacgcg	gaaggcgccg	atctgtccga	gtctgacggg	240
attgcctcgg	tgagttcgcg	ctggaggtag	taggcgagtc	ggtcgatggc	gttggcacat	300
cgcctgtggt	cagggaggac	atctcgcaa	tgtctttgat	gactcctcgt	actcgattac	360
tcggggtttg	tccacttggg	catagtacat	ggctngtcc	tgtgcttgcc	cgatcttcat	420
gagacggctc	ttgactgaca	ggtcagcatt	tcgttttttt	tggttggttaa	gtgaattatg	480
gtgatatctc	cgttgtcttt	tcttgagcca	tgacgatgtg	caacacg		527

(2) INFORMATION FOR SEQ ID NO:1111

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 992 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1111

atccaaacct	gtcttcgctc	agctctcgaa	agccgaaagc	tttcatattt	cgaatgtaat	60
acgacttaaa	gagctgtaaa	tatgtcgatt	gatgggggtga	attcccttc	catgagcagg	120
agcattcggt	acgaagcgac	catcagcgga	togaaccaac	gcgggaataa	cacttctctc	180
gaactgtaaa	tcgggttcaa	ccccaatgga	acaagcaaac	gaaaaagaaa	agccagatga	240
aaattgccat	cggcccgctc	atttcttcca	acttatctat	ggaaaaagcc	acaaatcata	300
cagattcgta	tcggcttcgc	gcagtcgtaa	gatcagataa	agaattctgc	cagaaagagt	360
gctatactat	tccttaccgg	atcggactga	atcggccatg	caaactgcat	agtttggctt	420
ctttgataaa	gtgcaaactc	cgtgctgctt	gtgttcggcc	gtaatctcca	gttcgttcag	480
aggagaaata	gcaaacgcaa	gctaccgcca	cttttccctc	gcttgatga	acgtggtata	540
gataggacac	tctgccactc	tctctactga	aaagatgggc	tatactatac	tatcggtata	600
agccgtattg	tggagaacta	ttgctctgct	gactatatca	tgactaaccg	aagatcgata	660

caaatatcgt ctattcagtc gtctgaacaa tcgttttcca catagactgt cgataaacct	720
gttgaaaatt cgctgtaaaa acttgtttat tctctgtgcc gatccgaaag aatcttcata	780
taaattatct ttctgcaaag acaaaaaagt tagcagcaaa ttctcatcaa ctttgccaag	840
gattactcac agctcggcac aaaaacaaac agaccgaatt gacgtagaaa caaaagtttt	900
ccacattccg atggaaactc attggctatc acattcaacg aagtgtataa cctgttagta	960
agctatcagt atctattcca atctgttaat cc	992

(2) INFORMATION FOR SEQ ID NO:1112

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 748 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...748

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1112

ccaggacaat gcaaattatt tccatcgtct gcgagaaatt acccttgaat cagcaacacg	60
aagttggtgc cggcctctca acttccaaag tattggaact gaacaaagaa tctctgcttg	120
ctctgatcga agaatcctta tacggcacca tggtagcgtg acttccgctg cgaacggaca	180
gcctctcaaa tgccagtcct gatagaaaac catgacaagc gcaactccga tgtttactcc	240
gatgcaccac aggtacttac gtacgtccta tcaaagccgg cacttatacg gtgaatacaa	300
agccgagggg tatcctgagg caactcgtac cattacgatc aagacaaaga aaccgtcac	360
atggacattg cattgggcaa ctcggttcc tctctgtacc cgatttcaca gcttctccta	420
tgaccatctc agtaggcgaa acgtccaatt ccaagatcaa acgacaaata accccacgaa	480
ttgggagtg cgttcgaagg cggacagcct gccatgagta cagagcagaa tccgctcgtt	540
cctatagtca tcccggtcag tacgacgtta cgctcaaagt gtggaatgaa gtggttccaa	600
cacgattacg aaagaaaaat tcatcactgt caatgcctat gcctgtagct gaattcgtcg	660
gtaccccgac ggaaatagaa gagggcagac ggtatctttc caaaaccaat ccaccaatgc	720
caccaactac gtatgatatt cgatggcg	748

(2) INFORMATION FOR SEQ ID NO:1113

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 448 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...448

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1113

ctaacattgt	cgccatcagc	atcaatcaac	aaccagcctt	caggaatact	ccggcctcaa	60
agccttcata	taagataatg	tccgattgag	aatcataatc	agcttatcgc	aaaccgattg	120
ggactcgata	ttgtcgttat	aaacggcgtg	acacaatatt	ccacttncac	ctgatcgtct	180
cgtgaagaat	aagtctatcg	atatactcca	aaacagtcgg	gtcttgtatg	tgaacaagga	240
gcgagcgttt	gcatagatat	tgtagccggc	aagctgcaat	gggtctttat	catcgtctta	300
tcgggttcgt	aagccgttag	gataattcca	ctttaatcgt	ccctgttggt	ttcaataagc	360
gagacaacga	aatcggtaac	aggttcgggc	tcgatgcagg	agtcccgaat	ccagggtgata	420
tcgtccaact	tcaagaaata	tatatcgg				448

(2) INFORMATION FOR SEQ ID NO:1114

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1018 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...1018

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1114

caattatacg	caggggttatt	gtatctcatg	tccttcgggt	agtaggcaca	tatcctgcta	60
caggacgggg	aaatagccga	ctttctctcg	ataaggctct	cctttttatc	ttacotttgt	120
gccgaagaac	tcaatcagct	attacaaatg	gatattgccg	tagtcggtat	cggctatgtg	180
ggactgggtca	gtgctattgc	tttgccggagt	tgggagcaaa	tggtcgtgc	atagatactg	240
atagaataaa	atcgagcagc	tgaacagcgg	gactatcccc	atctatgagc	cgggcttgaa	300
aaaatgatag	ctcgcaatgt	gaaagccggc	agactgcgat	tcgaacggag	atagagcaag	360
cogtgccgga	agccgatatt	gtattcatag	cgtgggtaca	ccggccggcg	aagacggcag	420
tgcggatatg	ggctatgtac	tgatgctgcc	cgtagtatcg	gccgtgccat	gagccgttat	480
attctgatcg	taccaagagt	accgtgccgg	tgggatcgta	ccgactgatc	aggaagggtt	540
acaggaagaa	ttggacaagc	gtgagggtgct	gattgacttc	gacatagctc	taatccggag	600
tttctgaaag	aaggaaatgc	catcgatgac	ttcatgaacc	cgatagagt	gtcgtgggag	660
tggattcgga	ccgggcgcgc	gaactgtcac	aagcctttat	aagccgatgc	tcttaaacia	720
tttccgtggt	cttttatgga	cattgcttcg	gctgaaatga	ccaaatatgc	tgccaatgcc	780
atgcccgcac	tcggatcagc	tttatgaatg	atgtggccaa	cttggtgcga	cggtgggagc	840
agatgtttcg	atggttcgtc	tcggtatcgg	ttccgattca	cgataggcag	caagtttctg	900
taccocgggt	gcggatacgg	aggatcttgg	ttcccaagga	tgtaaaaagc	actgatcaga	960
accagcagaa	gacaacggct	tcgaatggaa	gtattggaag	ccgttgaacg	tgtgaacg	1018

(2) INFORMATION FOR SEQ ID NO:1115

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 367 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...367

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1115

cggcactccc	ctccccccgt	acgatggttc	aggetccaaa	aattgccggt	ttacagccat	60
gaaagcgtgg	cgcgtaattt	tttgcgtttt	ggctcggggg	taaaattttt	acgcgccaaa	120
gcgaaaaaat	tctcgccccg	ttttctcgga	tttacagacc	acaatccgag	cattttcggc	180
tcgtaattta	tcgaaggaca	gattttaccg	cattaaagat	gacgtgtact	tgaaaaaagt	240
tgacatcgga	ggggtaaaaa	aggaaaatgg	ggaagcgaat	ttcatctgtt	ttctatgaga	300
tttgagcaaa	attcaagata	aaagaataac	ccctgacgtg	tacgaaaaaa	gttggggatc	360
ctctaga						367

(2) INFORMATION FOR SEQ ID NO:1116

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 559 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...559

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1116

gatccccggc	ggtagtgtgt	caggagtttt	tccacatagt	cggcattgct	tgtccggcca	60
taaattcgcc	ggtggatatg	tccagaagag	aaataccgag	acctctttgc	cgcaggagac	120
ggctgcaagg	aaattgttct	ccttatggag	agtacattgt	cgttggtcga	tacgcgggga	180
gtgaccagtt	cggtaaaccg	cgtttgacca	gcgttttggt	ctttttcgga	tcttccagtt	240
ggtcgatatg	gccacgcgct	tgccggctcg	taccaatttg	ggcagatagg	tatcaacgca	300
tgatgaggaa	agccggccaa	ttcgacaaac	tgggcagctc	cgtggcacgc	ccgtgtcagc	360
gttatcccca	aggatctcgg	aagccacgat	ggatcctccg	aaaatgtttc	gtagaaatct	420
cccaccctga	agagcaggat	acatcagggt	gtttttgctt	tgatctgaaa	gtattggcgc	480
atcaaaggcg	ttctaccaca	ggctttgcc	tcgtgaaaaa	agttgattgg	ataagaaaaa	540
ggcagccaag	tgcatgtc					559

(2) INFORMATION FOR SEQ ID NO:1117

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 323 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...323
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1117

ggaaacaaaa	cttaaagcat	ccttggn tac	atcttccttt	ttgactatag	taaactctnca	60
atttgaacat	tccctccgag	gaacttttga	taatctctna	gtaagggaca	tgtacaataa	120
catacttgag	caattcccaa	aacagatctc	tngntgctct	cgtgatgata	ctacatgtgc	180
ttncctataa	gttttttata	ggcaggcatc	catttaactg	cttttntaag	ccagtattnt	240
agacgtagga	ggcattatta	agcataaaca	tacttntaac	gntcttatng	tttaccatga	300
aagantttatt	ctntacttaa	aaa				323

(2) INFORMATION FOR SEQ ID NO:1118

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 2056 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...2056
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1118

cgaacatccg	tctttggctc	tctgggtcgg	caacaatgaa	atacgagaag	cctcaaatac	60
tggggatggc	aaaaacgctc	cgaccgatcc	acctatcaaa	gtttctcacg	gactacgaca	120
agctgttttg	ccgacttctg	ccggagctgt	ggcagcattg	gatccacac	gcgcctatgt	180
agagacatcc	cccgaaccgg	taactgggga	cgcccagcca	ctttggtctg	gggtgacagc	240
cactatgggg	agtatggtac	ggacgcgaac	cattcggcat	cctgcgagag	aggaccgcg	300
cttcatgagc	gaattcggat	ttgaaagttt	ccccgaaaga	aaacgttgga	gagctttgca	360

tgccgggag	acatgcagct	cgactcccc	gtatgaaagc	cagacagaag	agcagcgtgg	420
gcaatgagat	tatactcgaa	ttatgcggcg	agactatccc	gagccaaagg	acttcgatga	480
tttcgtatcc	aatcgctcat	catgcagggg	caagggtatgc	gcacgggatt	agaagcccac	540
gagcggccaa	accctactgc	atgggtagcc	tctactggca	actcaacgtg	catggccggc	600
catctcatgg	tccggcatag	actactacgg	gaactggaac	cgttgcaacta	tcagggtacgc	660
agagctttcg	aacccgttat	catcgccag	atgccgaacg	gcgcacgac	agcatcgat	720
cggatgctcc	cgaagcaaag	gagaggatcg	gatggcactg	cgcacgcagc	cgatcagctt	780
cggaggaaac	gctatccgac	tttttggtg	aggaatatcg	aagtagacaa	cgacacccca	840
ccgtcctgcc	attcccgcac	gaacaatggc	tgccacagga	atgcagcgaa	cgaacctgct	900
tcgctgtcg	cttggtgagg	atgtgggaga	acatacggcg	aagtctgggc	ctccacgctg	960
tattatcatc	attcgcccaa	gatttgctac	tacctgtggc	tcctcctatc	tcgcaagagc	1020
ttcgccgaa	ggcctgagga	cttgggagct	gacagtgcgg	tcacctatt	tggtgaagat	1080
ctatgtgtg	aaacggatgc	actcggagcg	cgattctccg	acaatgcttc	gatttgctcc	1140
cgaacgaaga	gcgcagacta	ataatcacgc	tgccacgat	agtacggaag	acccggctat	1200
tcgtctgcga	cacttataag	gatcgcgat	ccggcctatc	ccggagtctc	tcctactcgg	1260
agggcgtgca	gattctcgcg	aagaaaccag	aaaaagcggg	gccaatatcc	tgtacgtgat	1320
caacaccaac	gacctctat	cttcggcagc	tccatgcac	agataggcgg	gctatgctct	1380
tgtcagatcc	tgctgtgagg	aacgagggag	aagggtatcc	cactcgtctc	tgtacgatcc	1440
gggtcaaagg	gggaaaatcg	gctctcggat	aaggcaccgg	tacacgacct	ttcattccat	1500
ttcgccccct	ctaccatcag	aatcgacaa	aagggtctgc	ttattcggag	cagcagctgg	1560
agaaaaagta	agcaacggac	tttcgttcgt	actccaatat	aaatgtcacc	cgaaaggaaac	1620
ctctacggat	tcggtctgat	cgctctcga	tatgaagccg	acatcataag	aaaatcgaat	1680
accagggtat	cggattcgcc	aatcgattgg	actattcgct	cccttattca	gcatgagtac	1740
tgctctttcg	gagcgggtgg	tcctgggatg	agtttcggaa	aagatgggag	tcaatcggtt	1800
cgacttcact	atcgtttgca	cgtttacctg	tagatcggga	tctatccgca	gtcggctgtg	1860
taggaaaaaa	tcgccgcaca	cagacgattg	ccgtcttaca	gtgtcacctc	ttatagacct	1920
tcatgaatca	cacgctcgga	cgggacggac	acgacacgtc	tgtcaatgat	tcgccatcac	1980
ccctttggag	caatacccg	aactcactct	tcgaaaacac	gaacccaaaa	cgctaaaatt	2040
gcgggtctgtg	tttttc					2056

(2) INFORMATION FOR SEQ ID NO:1119

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1050 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1050

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1119

actctagagg	atccccggct	ccatgggggc	attgccacta	ccgtatgtcc	catgactaca	60
cccttcagtg	aggggatgcc	gagaatgctc	tccactactc	tcgtgtaatg	ccgggggaata	120
ttttcaggat	cacaacgttt	ctgtccatcc	cgctctggaca	ctgaggggcgg	catcggcccc	180
tcggtctgct	atcagacatc	ctcgtatcga	atgtcgatac	cggcataggc	caagggtgaa	240
aagtttatga	agcaaaggcg	tcgaactggg	ctgcaactgac	tttcgatgta	cgaatgccacg	300
catcagatag	ttgtcgaaga	aaatacaaac	ttccgggtacg	cggcatagcc	gttttggttg	360
gctgcagcaa	tttcgatagc	ggtgatgagg	tttctttgcc	atccgtacga	agggtaccga	420
taggcagctg	tgaccctgtc	agattacggg	tttctgcaga	tcacccagca	taaagcttag	480

agcagaggcc	tgtaggccat	cgtatcagtg	ccgtgtagga	tgacaaaacc	gtcgtaggcc	540
ggtaattctc	ccgaatggtg	tcggccagcc	ttaccacaaa	atccggagga	tagcggccga	600
gtcgtatgga	ggatcaaact	ggatggagtc	gattttgaac	cgaaatTTTT	cagttccggc	660
acattggttt	ccagatatTT	gaagtcaaag	cttctaatac	tttcgtctcc	ggattctcaa	720
tcataccaat	tgtccccccg	tatatatgag	gagaatcgca	gaacgtcctg	aagcagattt	780
agttgcatta	tgtggtgagc	taaacaaaac	ggTggcggtt	ttttccttcc	ggctccaaga	840
tcgtacagcc	atcggactat	ggctttggat	acggccggtg	cgaaagataa	taaaagctcg	900
ttcagagcat	gctttacggc	cagagcaatc	gttttgaagt	gttaacacac	atataaacct	960
gatgatgctc	catccaaaat	agcttagcac	gatattgtct	gagagcgtag	agaggaaaac	1020
gatcaggaga	aaagtcaaga	ggataactct				1050

(2) INFORMATION FOR SEQ ID NO:1120

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 839 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...839

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1120

ctgacataat	tcttgtgttg	tgataaatcg	tcgttagtta	catgctctga	aacgtttcaa	60
aattacaaaa	acaatcaagt	ttttcatcta	tgctctaaag	acagcatcta	taaaaacgta	120
tttgcaatgc	gatgcaattc	gctatgaaaa	gcgataaaat	caagtgggag	gcctcttgtg	180
agacagtaag	ccgcctacat	attccctatt	gacggaccgg	tagtaaatga	cgaagtgttt	240
ggcctggact	tcttcccga	accgatgcac	ccttaccctt	tcgagcagct	cagcagcgat	300
agccccagcg	acaaaagaag	catttgcgtc	gctcgagta	ttccgataga	gctgaatgag	360
ggcttggtt	tcggcagcat	ccgcaggtcg	gcgatctggg	agaaagcacg	aaccggcttg	420
ttgttttogg	gtttgatgcc	agcaggaagt	ctattgtccg	ctcgcggtag	tcctccatgc	480
tctgccccct	aaccaagcat	agcgaagtgg	ggctgctaca	ttgatcagca	gggcatccgc	540
gaaatagcgg	caagcgtact	acgggaagga	acaggggtgg	gcttcccaag	cgataatgcg	600
aagcccagta	agacgatgcc	tcacgctga	gcttctggcc	agttctttag	cggacacagt	660
ctccacaaaa	gaagaaaaca	ggaactgcag	cgatgcagaa	tggcggncaa	ctgtcccaat	720
cgacgatgta	cgaaaaggca	ggacggggcg	gatgcagacg	aaagagagag	gggatcaaga	780
ngctcaggtc	gancttatgt	ctcaaaaagc	gtattccgaa	gcaactnttc	gcaattatc	839

(2) INFORMATION FOR SEQ ID NO:1121

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 642 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...642

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1121

cgtcaatggc	aggggtggcat	ctacctatcg	cgaagaaggc	gacgagtaca	tattcgcggtg	60
cgcttggccc	ctgagttcag	gcgatcattg	agggacttga	aaatatcctc	atttatacgc	120
ctcagggcaa	aggtgttcgt	ctgggaggct	gggtaaaata	gaagagctgt	acactcctcc	180
caccattgaa	cgaaagatcg	tcagcgtgtc	gttatcgtag	cttccacggc	tgtcaaagga	240
gctgcttgag	cgatttggtc	gaagtggcca	aagaaaagat	tgctcaactg	gagatcccg	300
cgggattgac	tacaaaatca	gtggtacata	cgaggaccag	cagagacatt	tgacagactg	360
agcaccctta	tgctgctgat	cgtgatactc	gttttatcgt	catggcagca	cagttcgaga	420
gtctcgtcga	tccgtttgtg	acatgttttc	cataccggtt	gctttcacaa	ggtgtcatag	480
tccgttcttat	attacccaat	taccactttc	agcgcctatg	cctttatcgg	tctgattatc	540
tgatgggtat	cgtgggtgaa	agaaccggta	ttgtgctcat	cgatttacct	cgtctgtgtc	600
gcgaacgccg	tatgggcatt	ctctctggcc	gtagtacagc	cg		642

(2) INFORMATION FOR SEQ ID NO:1122

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 512 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...512

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1122

cttcagctgt	tccgctcaca	gctacaacga	tttccgtata	gatgcggagg	tctttgtaac	60
agggttatac	tggagcggag	caaagtttac	tacctgacac	gtacatcgcg	caggatgaaa	120
ggatcgctca	gcgtagcgat	ttcgcccgga	agaacttgct	ttcattatag	ctctgtccgt	180
acacgtaggg	gatttgcag	gattttcagc	gcgagagata	acacctttag	agggagcgat	240
cagcaatcct	tcttttcgat	gaatttggaa	gaaactacct	ctaccttcat	cgcagtggtt	300
cagaaacggc	aagagaacgg	gaaagaatgg	gcaatatagg	cgtcctttct	ccgagatatt	360
gacaccttcc	gtgaaggtag	gcacctgaac	taccttttgg	aagtctgttc	gcctgtgaac	420
tgaagattgt	ccatacggaa	tgaccttg	acatagactg	ctcagcggag	agcagtcgta	480
cttggtgggtt	cgaacgcgct	ctgccggctg	tg			512

(2) INFORMATION FOR SEQ ID NO:1123

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1063 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)
 (iii) HYPOTHETICAL: NO
 (iv) ANTI-SENSE: UNKNOWN
 (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
 (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...1063

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1123

ttcgccaccg gctcggcaag cctcgatcag gtagtcgtac gagagaactc accgaccttt	60
ggagcaccct cctgttcctg ctatccttcc ttgtcacctc aagaagtggc tccatcccat	120
cctcacgata ctgcttgccg gtctcgoggc ctgctgatat acggcttctg aaaacgagct	180
atgccataaa tcgaatatga cacaacccat tcggccggct taggatttcc aagaagggct	240
ttatccaacc gagatcgaca gatggagata ttcgttgaca gggtacgaac ctgcggcctt	300
tatctttaga gcttccta atcttcaaga cggttcanc aactctcaag aaacgtntgt	360
tggtatgcct tagcaattcg cgttcgggtg cctgcgtccg atgctatcct cgtacttttt	420
tatgcttctt gctgtaatgt ctctaagaac tcgcgacgtg catcgaagat ggactcaaac	480
agtcacatcg atctgacta ttgacagcct gtaaggctt attgcccact attccatcac	540
ctgcacacct agtatccttt gaggaataac aataccatac ttgcctgacc ccaaacccaa	600
tcgacaagga tattagccac cttttgagac tcgattagtc agctttccaa cgatcccaat	660
aaaatggttt caagactcga ttcaggcgtc atcatcggtt agcaacttga gatccccaac	720
atcgatgtct ccatccgctc tttgtcatag ccgactcttt tccaagtgc tattgttaca	780
ccttgtttgt tgcccctcct gcacgcggc gatcatggac aaaaccacct tccatttcaa	840
tatatatggg agtaataact taacatttgc catctttctt cacttctttg agttcaacat	900
aaatcaactt ccaaaagcca ttncgcatg tttacaaaaa gctcgttcca cagtccctcc	960
gtcattcctt cgactgcacg accttcgttt taagcctatc ctatccataa ggatctat	1020
ctctcttaag agagtgatta tctatgtaca aagataagtg ttt	1063

(2) INFORMATION FOR SEQ ID NO:1124

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 527 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular
 (ii) MOLECULE TYPE: DNA (genomic)
 (iii) HYPOTHETICAL: NO
 (iv) ANTI-SENSE: UNKNOWN
 (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
 (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...527

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1124

cgaaatttct	gtttgctcga	tgtccatata	ccggaggttt	gacctttccg	aagacactaa	60
gaatcagctc	tcagcaaaa	gagctcaatg	aaactccccg	caacagtctc	aatatggatt	120
ctcctatgcg	gaggcaactg	ctcttccctac	cattatctgg	aagttgcgca	gtatgaggat	180
gccacttgga	aaagtcta	tctggaagtt	ctacctcctt	tatggccggt	gccggtttca	240
gcccctcaag	ctgatttgga	agaacagccg	tcattgattg	gttttagccg	gtcagcagg	300
ctttcttata	aaaacaataa	ttatttatat	atggatgtag	acataagcat	gctatggcac	360
gcacgtatgc	caatggcaaa	tttagccttg	gtctcgcatg	gcctacgaat	atcgcatctc	420
caataccctt	ggggcaggag	cactgcgaca	tatgaattcg	gggccgaagt	ttttgcagcc	480
ttggctacat	caatgntcat	ttctaagaaa	acaagaccct	gataggg		527

(2) INFORMATION FOR SEQ ID NO:1125

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 323 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...323

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1125

ccccgggtgc	ggcacaagca	tttctctgcc	aagtctacct	cggccaagcg	cgcttacgag	60
agcaagacca	agacttgcgt	aagaagcttg	cacaactttg	gcagagaatg	aagactttgc	120
acctgaagat	gctctacagc	tcgcggctgg	aatccctatg	accagaatgc	cgtcagctca	180
ttcttcgacc	ctgaatgatg	tttggcctcg	cagatggctt	cgacatcgtg	attggcaatc	240
ccccgatgta	caactacaga	ataatggggg	agaattaacc	aagctctatc	aaggtgtgac	300
tttcaagact	tttgcctgac	tgg				323

(2) INFORMATION FOR SEQ ID NO:1126

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 586 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature

(B) LOCATION 1...586

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1126

```

cgtcgtgtat tgggtgtaaa tccgaaagtg tctaacgtac agggagtgga tgtgtgcccg      60
atgtgaaaaga tctaccccaa gtagatttgg ctattttgct attcctgcac gtttctgccc      120
acctacgatc gaggtgttg tgaaagaaaa gggaccaaag gaatcatcgt attctctgca      180
gggttctccg aaatggtgca gaaggcaagg ctctcgagcg gcaaattggc gaactggcca      240
atgaaccgga gctaccctga tcggcccaa ctgcgtcggc gtaatgaatc cgctcaccaa      300
tcggtattta ccaactccgt gccggtactt acgcctaagg gatcgacttt atctccggtt      360
cgggggcaac tgctgtattt atcatggagt cgctctgagc aaggggcttt ctttctatcg      420
gtatattcgg tcggcaacgc tctcaaacgg ggtgtggaag atgtgctcga acatttgga      480
gagacattcg tgctgccact tcttctcata cactgctcct atatatagag actatcttca      540
accgaaacgc ttctgaaaca tgccagatca ttggtacaga aaggct                      586

```

(2) INFORMATION FOR SEQ ID NO:1127

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 400 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...400

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1127

```

ctanaggatc cccgtgcgat gccgacaatg aacgtatcgg tcggctttaa ccgcagcttc      60
aggtgtggtg acgcctgctc cggccgaatg gggcaagtgc ctccgggaca gtaccgattg      120
cgttttggcg agagtggcgg agaggatccg actttgttac gaaggacgtt tatctcttcc      180
gtccgaaaga tcgtcattgt cgaatccctc ccaaggcctt tggacatatg tggcggagga      240
gaaatcgaca gtcaccgccc tgcccgcatc ctggtcgggt ctactcccaa ggatcggatg      300
ctcaggagtt gtatctgttc tacggacctg actcaggcag gcngattcat cgaaaggaag      360
atgatccgct tgccggccgg gtgagatcgt cggatagtgc                      400

```

(2) INFORMATION FOR SEQ ID NO:1128

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1160 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1160

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1128

```

gaatctgcca tccggacaca gagcagatag catcttccat caatagacct agtatcctct      60
cgtatgagac cataatatcc tctcatgtga gaccatagat cctctcatgt gagaccatag      120
tatcctctca tatgagacca tagtatctct catatgagac catagtatcc tctcgtatga      180
gaccatagta tcctctgtat gagaccatag tatcctctta tgtgagacca tagtatcctc      240
tcatggagac cataatatct tctcatgcga gaccatagta tcctctcata tgagccatag      300
tatcctctca tgagagacca taatatcctc tcgtatgggt tcctctttgt atctccggga      360
aagatcaaat agcaagcagg tgtatgactg ccagcaaaca gaagaatgaa caaatgtgcc      420
tgcttggtgt gcaaaagtct ctacaatgca aaggaccaag caaaagctat tagtctgaag      480
aacatgcaga agagagggaa ggggagcgga tataaaaaat cgccctgcg aaaagagctt      540
cgcagggccg gaggaatatg aaaaaagagc ttttgggctt gagggcggtg ataatagccg      600
gtttctcctg cttagtcttc cggcacgtag atgatttgcc gctttcgagc tggtaagcta      660
cacctacgcg cttgcctttg ctgccgctcc atcggaggat tcgtcggacg gagtgtactt      720
ctccaccttg tcgccttctt gatcaagatt tccatgttgt ccttgccggg attcttgacg      780
attggtagtc ttccttgctg aagacttcgg tcatgttgaa tttggtgacg aggcaaccat      840
cagtgccacg gcaaagacca tggctacgtc gaagagggtg gaacaagtga ggaaggatcc      900
gtgtcttctt cgtggaagcg tcttctggac aggcgatcag gagagttttt tcgttgatgt      960
aatcgagcca aacgagggtcg tccgattgta agtgcgcacg atgtgcaggg ctatataccc     1020
tacagccgag caaacatacc gatgaccgtg gtggcaaagg ctacttgcat attgtaggca     1080
tctgtccgat gtcgccgctg gagagtcgga caagggccgg gcccatcgga tgagcgtacc     1140
catcagaccg agtatcgggc

```

(2) INFORMATION FOR SEQ ID NO:1129

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 568 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...568

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1129

```

aagggaatac ctaatcatta cttcacacca tagtgcaaac ttcgtagtac nctttcacnt      60
tttgcacctg attgcctngg atgattatct ctccgtcttg gctgctcctc ccactccgca     120
tcgtgtcttg agcaggcgca gacagatagt cagatcgctg gcggaaccga cgtgtccgct     180
cacaaggggtg acctcttgcc ccgacgctgc ttccgatcca gcgtgatacg cagacgttgt     240
ttctcggagg aagcgtctca gctacctctt cgctatcttc atgttcgtat tggaatcggg     300
attcgtactg tacatgaccc ccagtcctgt cttccagtca ctctatttta tattctccat     360
aaataaaagc tgccgaggag ataccacaac ctcacgacag cctttgttcc taatcaaata     420
ccgcgcgtct tagtgccgat tgttcttttg ggccgacttg gtaatgcgct tgcgcggctc     480

```


aggcatggtc cgacacgaac gatatgctca ttgcaccct tccacatgat ctcccttttcg 540
ctgtgcgag ataagctatc tcacggcc 568

(2) INFORMATION FOR SEQ ID NO:1130

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 460 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...460

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1130

tggcagatgg ttctgccatc cgcctgaccg tagcacgcta ttatacgcct cgggacgctc	60
cattcagaag ccgtattctt cgggcgtaga tgaaaattct atcaggatct gaggaatcgc	120
ttcaatcacg gagagctata ctcgccaca gcataccttc actgggagga aagatattca	180
agacagccgg tggccggaag tctatggtgg cggtggtatc ataccggata tttttatccc	240
actggtacag nccgtcttaa ttccatatg atgaaagtgg aggattcgga tttgtccctc	300
gctatgcttt cctgtacagc gatgcgaaca gggtttcctt gagcgtttta agacagtoga	360
ggagttggga gcttatctgg atcgacttta tcgatttcga ctttgcttct tttgccagcg	420
taccggatcc cgatgccgta cttttttaat caacgaagct	460

(2) INFORMATION FOR SEQ ID NO:1131

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 424 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...424

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1131

ccagacagca ttctgatcag ctcatgtcg atcttcgatg ccggcagtag atcgatcatc	60
ttttgatcaa tgtatcggcc acttgaggta gcagttcggt gaggtcacga ccaattccat	120

ttcaccctct	ttccacttat	gaggetgacg	gatgcgcgaa	tgaggagata	cagcccctcc	180
ttgcaataat	tgccgagttt	acatgagcct	gtccgaaaag	aggatatttcg	cccgtgccgg	240
acagacctct	aacgtaatct	ttgagtacgg	attattcgag	cgagagattc	cctgaaaaggcc	300
ttggtaacaa	taccggccaa	aaccaaattt	ttcccagcca	aggatcggat	cggtcaaaac	360
ggctgcatgg	gtattgcaat	agtggatcga	gatgacttgg	tactgagcct	ttggattgga	420
acta						424

(2) INFORMATION FOR SEQ ID NO:1132

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 506 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...506

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1132

tccccttcgt	cgttcgggtg	cgcacggcaa	gcaggctctg	accatgacgt	gggcttcggc	60
tgcaatgccg	cagcaatcat	caatacgcgc	atcatcgaag	ccaaagggag	agactgatag	120
ctattctgac	caacaacttc	tctctgttaa	cgggcgttgg	cctacacaga	tactccttgc	180
cacgatcttc	ctcacactgc	cgtaccggcc	tatttgctg	gcgtgatcgg	cattgggtca	240
gtcgtgccat	tgcattgctg	ggtatcgctt	tcattgtttt	cttctcttgg	gtacctcccg	300
gacgtgctg	cgaggccaag	tctccacgtt	caatctggag	cttcacccta	ccgcccggca	360
cagttttggc	agacgatcta	taaattccatc	gtgaccgtac	actcggctcg	tttgtggcgt	420
gcccgttgtc	ttttgccgcg	gcggcccggt	gcccttattc	tggttcacc	tgcaacatca	480
aatcgggggg	attcggggata	gccgaa				506

(2) INFORMATION FOR SEQ ID NO:1133

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 422 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...422

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1133

agtgcctcggg	cgtgaaagag	accgttggac	gcatacgtcg	tgccatcgag	tcttaggctg	60
acagcaataa	tttttttcga	aatatatgcg	attcctttca	gcctgatcgg	attggctctat	120
tcttcgctga	tcaaacttgc	cgttccgtca	atcccaaagc	ccgcatgatg	gttcgtgggc	180
gatggaaggt	gtggcgacgc	tgcgtgaggg	catagtgccg	ggcgggcgct	atatatgggt	240
tcatgagctt	ctttgggcga	attcgagcag	gggagaccga	tgatagaacg	catcgaagcg	300
aatatccgga	ctataggatc	gtgcttacct	tcttcagccc	ctcggatatg	aggtacgtaa	360
gaattacgaa	ggtgccgacg	tgatcgtgta	ttgccggcag	atcgttgccc	gagtgcgtaa	420
gt						422

(2) INFORMATION FOR SEQ ID NO:1134

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 548 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...548

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1134

tgggtatagc	cagagctttg	ctggcgaagc	ctgcgttgat	cctggccgag	aaccacaggg	60
caacctcgat	tccgtgaccg	gattgcagat	cgcttctcgc	tctacgaaat	cagtaagcag	120
ggcactgcag	tacttatgag	cacgcacaca	gcagcctgct	gtcgcactctg	ccggcacgga	180
cattggccgt	tcgtaaaatg	gcgatgcctc	ctctttggtc	gagcttgagt	gcagatgctg	240
tttcagaaaa	aatacggaaa	tagattagca	cgataagatc	aggaattgaa	agtttcaaat	300
ttggcggtag	gtctgtagga	gatgctgaag	cgtatccgca	agtttgcccg	actgattact	360
ttcggtaaaa	ggaagaaaaa	ttatagtcc	ttggctatgg	ccggaacgac	caattoctt	420
gtcgaaatag	cctcacacct	ttcaaacgcc	aatgtggcac	aggcaaagag	ggtgtgcca	480
ggtgttgcca	agaaatatca	tcgcgaaata	aatgctctat	ccaaacgtnc	ggatacctta	540
gcgcagcc						548

(2) INFORMATION FOR SEQ ID NO:1135

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 566 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...566

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1135

```

cggagccgat gccatggaca aagcggccaa gctcaaagcc ggccaagtgt gctgctcgaa      60
aatctccgct tctatgccga ggaggaaggt aagccgcggg actctccgac gatgcttcgg      120
acgaagaaaa agccgcagcg aagaaagcgt caaggctgct cagaaagagt ttacgcaaaa      180
gctggcttcc atggccactg ctacgtgaac gatgctttcg gcacagcgca tcgggcacat      240
gcttcacagc actgatcgct gactacttcg accgagacca caaatgttc ggctttctgat      300
ggagaaagaa gtaaaagccg tagaaagagt gctgcacgac atcagcggcc gttaaccgcc      360
atcatgggag gctccaaggt atcgaccaag atgaaatcat cgagaacctt ctcaacaaag      420
tgataacctt gatcctgacc gcggaatgac ctatactttc accaaagcgg caggcgggtcg      480
gataggcctc ccatcggtga agacgacaag ctggatttgg ctgcgcgacat cgtgaagaag      540
cagccgaagg ggcgtcaatc tgatac                                     566

```

(2) INFORMATION FOR SEQ ID NO:1136

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 794 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...794

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1136

```

atccccgaac ctcaattcgc tgtgattttc gtttttatac aactgtccag ggactatttcg      60
ggattatgtc aggtggaaaa tggcgctcagt ggcctccgc caattggctc cttcgccgat      120
ctcggtatc agaggaacac gcaaagaggc atcacccct ccatacacga gcgtacaagc      180
tcgogaactt ctgcagttca ggacgaagaa cgttgaagtt gagttcgtcg tgcaacttga      240
ggatcttcgg ctccgcagct tacgctcagt gatttcctcg tgtattctga tcatgccagc      300
ttgatcaggt cggcagcaga gccttgata ggggcattga tggattccgc tctgcatagc      360
cgcgagcga cggcattggc actgtttata tccggaggaa tcgcttgcca ccgaacagtg      420
tgggtgacgta gccctgtcgc tggcttcggc aatactccga tccatatacg ctttaacccc      480
cgggtaagag caaagtaacc ttgatcaag gccttggctt ctgtacggga gatattgagc      540
gttcgctaag cccgaaagca gagatgccgt agatgacccc gaagttggcc gttttagctc      600
ggcggcgcat gtcacccgtg acttctacaa gaggcagctg tatatttttg aaggctggcc      660
tcgtggggat ggtcttcccc atggagaaag cctgtatcaa gctctcgtct tcaactcagat      720
gcgccatcag ccgagttcga tctgagaata agtctgcgct catgaaaatc attcgtcatt      780
gtccgaccaa agca                                     794

```

(2) INFORMATION FOR SEQ ID NO:1137

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 486 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...486

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1137

```

gtattgcttc tgatccatgc aggcagcacg gcctattccg tggtccgaa ctgtatggct    60
tcaaacactt ccgcccgggt gtggctccgg tgggtgtctt ttcaataagg ttggctccgc    120
ttcgcattat cgctatctgg aggaagcgct gcggatgccg gtgtggccag cctcggttac    180
ttgccgaaga tgaaagtttg gaaataccgt cgcggcattt gggcttgtct gtggaggatt    240
tagtcgttat gattatttgc cggacagggt ggcagatgcc atcgagaagt atgtgatgtg    300
gagagattgc ttggtctgat ggcctccgat gtcgatccgg ttacgaagaa gagagcttta    360
cggagtcttc tttgcacggg aggaaatgca ttcggtggcg gatgacgaag catttaactt    420
cacctatcgg gagaatatte gcggctcgaa agccgggaag ggtttgttcg attcagtcct    480
ttgcgg

```

(2) INFORMATION FOR SEQ ID NO:1138

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 622 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...622

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1138

```

ttccgctaaa agattctatc aaggaaagag ccttgtaatg ataatccgag cttctgccaa    60
agcaccgata cgacggctat ccgttccgag atgattcctg cttgtgcggc tacgatggtg    120
tcccttagat tcaatgcagc gttcaacctt tttggtgata tagcatcgca tctgtgtatt    180
gggacatatt acgcatcggt tgccgacctc gatcgcgaaat aacattttgtc ccacaagggt    240
cttgtctgta cgctgttctc gttaaagctgt ttaacagaat cagtggggag ttcttttcgt    300
acagcaatgc agtaatacgc tttttctctc gggcgatttc agtacagagt gtttttcttt    360
ttttccacat ccgaccaaaa tcgacaatat gataataata atgggaaaag tttcttcatt    420

```

tggtcttcta	tatgcaagtc	attccggtgt	aaaactaatc	aaacatggat	aatctgacac	480
ataaatatgg	ttgtgaaaca	atattgagag	gagtgcgaag	cgtccatttg	aataatttct	540
atatttgccg	agtcgggtgc	ggtaaaaaag	atgaataaac	ttttcttctc	ttcggcataa	600
gacaactaaa	aagaaaccga	ga				622

(2) INFORMATION FOR SEQ ID NO:1139

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 567 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...567

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1139

ggccggtcct	gtctgttggg	cgatggccgg	cataccgcac	aggatgagga	tgccaatgat	60
aatagcgatt	tggtcatacg	ttggtcgggt	atcgaatcaa	tgagtgagat	gaggacaaaa	120
gagccaatgg	gcgaatatgc	cggcgacagt	ccgccgatcg	catgtgctcc	gatcgctgtg	180
gtgatgaggc	ggcgggtctt	agactgtcga	gcatggccgt	gtgcgtactg	aggaagccgc	240
tccagacata	cccatggcgg	tgaaaacggc	tactgcattg	ccgtccagga	tacctgcgcc	300
gagaagttgg	gtaccagtcc	gagggctgca	ccgactgctc	cgacgcggtg	atcgggaagg	360
cgatgaggcg	ggaatcgggt	aagccgaaga	gcagcggaag	aggaagtcca	ccttgtcggc	420
aagggccggc	agcaggccga	cccttcgtat	gccttgccgg	cgaagggtgc	gtcgggtccg	480
gcaggtccgt	ggtgagcatc	ataacggccg	tactgatgat	gagtacgccg	gggatgatgc	540
gataccgagg	tctacacccg	tcttgcc				567

(2) INFORMATION FOR SEQ ID NO:1140

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 561 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...561

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1140

```

ccgaagatac aggcttttoga cttcaatggc agccgtatta cgaactatga atggaaagct   60
cctcttttggc oggtctgggt gccctgatgg ggcacgaacc atcacggtct gttgtatcat   120
cgcaggcagg aaatccgaaa agatgaaacc tcctatcagg gaagtataga gggccttata   180
gatttggttc tggaactata tgatagaaat aagttacctt tgtgaaccaa ggtttttccc   240
cctcgacgaa tggtccgat cgtgtcgggt atgcagcaga gcaagcaagt tgctcagggg   300
gaatataaat taggaagttt ttgcatgaac atactcgaac tttggaacaa gaagtcgtac   360
gccgtaacag cttagagcaa cctgcgtaat tggggatcga tccatatact gcagcgggaat   420
ataccgtcaa tgctatttcc gcgagatcaa aaggaatttc aatgggcatg gaagaatgtc   480
gccaaacgtc agtaagcatt gccggacgta ttatgagccg ccgtatcatg gggaaagctc   540
attcatggag ctgcaagatg c

```

(2) INFORMATION FOR SEQ ID NO:1141

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 815 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...815

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1141

```

ttcatgagca acgatgctgc ccgtggaaag ggaaatgata gtcgctcaat tgggtgcaag   60
gatcaaaccg tcgatattct tgggatcgaa taccatgagt tcgaagaggt cttgtgccgc   120
acggatggcc aaataggaag ctcttttttc ttgtctcgaa ggatccgacg ctctttgatc   180
cccacacggg tcatgaccat tcgtcattgg tatcaaccat tttttccaga tcgtcattgg   240
taatacatct tcaggagat agggcccaac ggctgttata gccgcgttta ttttttcata   300
atcgaatttg ttgcataatg gacgggcacc ggcccttttt aaaaccatat cccgccggaa   360
aagattattt gtggccgcta aaataaaaaa aagtcccaaa gaacaggtct aagggactct   420
ttgctcgtt cttgccgcct agcgacgacc ggcacgacc gagggcaagc aatttttaca   480
ctgccacttc ttttcgattg ccaacttacc gcggtagtag ccacaatcac cacatactgg   540
tgatagatgt gccatgctcc acaattagga cacttgacca aagtcggcta acggctttgt   600
catgagttct ccgcttggcg gttctcgttt tggactgctt cttttaggat gtgccatttt   660
tattttattt aattgttctt tttgttcaat agttttccaa gagaatccca cctcgaatcg   720
tgagcggtea taccgattct tctgttgctt catcggcacg tatcgccagc agatcggaca   780
ttcgttcata atctcggggt cgcactctca tccga

```

(2) INFORMATION FOR SEQ ID NO:1142

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 668 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...668

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1142

cggggctttc	cgtagagatc	aaagccttct	atgggggcaa	tctctaccta	tgtttaccaa	60
aaagacttat	acggatgttc	gactggtggg	agcacctcca	ccagcattgg	caaattcggg	120
gccgatacgg	acaactggat	ctggcctgtc	atactggcga	cttctccatc	ttcogtatct	180
atgcggacaa	gaatggaatc	ccgcaccata	ctctgaagat	aatgttcgcg	tcaagccgaa	240
gcgttcttca	atatctccct	tggtggagta	caagagaacg	actacgccat	gatatggggt	300
tcccgggtac	tacgcaccgc	tatttcacgg	cttcggaagt	agagaatgga	aaagcatcga	360
caacgatatt	cgcacccgca	tgcgatgat	tctcagggtg	tcatgctcag	ggaaatgctg	420
gccgatcctc	agatcaaaat	ctgtattcag	ctaaatatgc	cgttcgcag	aatgcttaca	480
aacgtgctat	ggtgccaaact	gggcgatcaa	gacacgcggc	ctgcgtcaaa	acaaacaggg	540
atgcaggaca	ggctgatcgc	atggggagcg	aagcagggtg	ctcctcgaat	gaagagccgt	600
acacgaaatc	gatgctacgt	aggccaagcc	gtgcggactt	gcgcgcgtcg	tattggatga	660
tagaagaa						668

(2) INFORMATION FOR SEQ ID NO:1143

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 525 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...525

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1143

cggattttcc	ggaattgctg	tcagaagtcg	agacgatagt	ctactccgga	ctcgaatcaa	60
tatcgactac	ttcatcaacg	aggtcatgga	cgaggatctt	tggaagatat	attcgagtat	120
ttcaaagaat	ccacgacaga	ctctttgagg	aggctatgca	agaactcggg	aaggactatt	180
cggaggaaga	gattcgttgg	tacggatcaa	gttcttatcc	gaaatggcaa	actaatgcat	240
cagttatgat	gctataatac	ggtacgaaag	atgaaaaaga	atggaatgcg	catcgcataa	300
tcatgttgct	gttgctctac	tgggcactcc	cctcaatggg	acaaagaacc	gtggatcgac	360
gaagtcgtat	ggatggtggg	gagacgaacc	gatctgcgct	cagacataga	ggctacaaaa	420
acgttttttg	ctcagttcgg	gcgcctctct	gagggaatgc	agactgctat	attcctgagc	480
agattgccgt	caaaagcttt	ttctcaatca	agccaagatg	gacag		525

(2) INFORMATION FOR SEQ ID NO:1144

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 375 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...375

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1144

catgaaacgc tctctaaaag gagaaataag cgtgggcgaa gggtagcaaa caacaaatgc	60
cgatgctgat ctttttcagt cggacagtcg gggcaaaggc aaaggagaac ggaaagcaag	120
atgatcaaat tcatgagtat cgccagcgca gtagtggcaa ctgctactat ctctccaatg	180
gcaatcaggc actgctatcg atgcaggcat tccattaaga agcatttcca aagccctcaa	240
agatctcagc tccccatcga aggtaatgtc gtaggtgtat tggtcacaca tgacatgccg	300
accacattcg aactatcggc tgccctgggag aaaaattcca cctcccgtat ttgctacgga	360
aagagtacat aacgg	375

(2) INFORMATION FOR SEQ ID NO:1145

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 510 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...510

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1145

atgccattcg ggcgatgtaa tatgggagaa ctggtctttg ccacagaggc ttgcgcaagg	60
caatggaaact acgtcccag tttgagaccc gttattattg actgaagcat tgcttcgacg	120
ccatctcagc gaagaagcgt tggctcaatg aatttactcc ttgaggaagt tccgatgcat	180
acagcaaccc tgctcaccgt gctaagttga ggttagaaca aaatgatccg tcccagacac	240
ttgagactgt ggtaccggta tcgaatctac atccgaattg gaggaacaag ctctttcctc	300
tattacggag cctccgccat gaaggacatg aaaaacctca agaatgccct ttgcctgctc	360
aaacaggcca tcgaaaaaaa atgatgcctt catccggcca gactccttcg agcgcgcata	420

ctcattgact tggagcgcta taagaagcca cccaggattt ggattgggtg gcagcattcc 480
 gatccggaag ggaacagggtg cctatgctcc 510

(2) INFORMATION FOR SEQ ID NO:1146

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 490 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...490
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1146

gtttggtagc accttgatta gaaacgtgat tggccggctt tgttcccttc gaaaactaca 60
 tgtaggtgga gtacacctcg atcgaagagg cacaccataa caaccctgt tcggcgtaag 120
 aaaacgcaa tgtattcgtt ccccgatagc gggttacaca ctaagatctt gggagttata 180
 ggttattccg ttcaggaatt gtataggggg caatcctgct tctgcccgga tcgaaccaac 240
 attgaattcg gattgctttt ttgaccgaat gttgcagtc gtacaggaag atggctatac 300
 cacaaggcag atggcggtnc accgtagagg ataacgggct atccgtacag ctcttcgagc 360
 taccgctgta gagctcggcg aggtacgctc taagcgtagc gagccgagcc gtaagagttc 420
 cgctccggga gccgtaagaa gtggccgagc tgagcccgta gagcgcagct cggtagcgtc 480
 taacggcgta 490

(2) INFORMATION FOR SEQ ID NO:1147

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 539 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...539
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1147

cccagctgat acacgtcgtt ctgacgatag ggaacatcct tgatcttgta cagatctcga 60

gcgttctgtc	caagtcattg	gcctgatag	cacaaacccc	gagaagaacc	ctaccatcat	120
agagttggaa	tcctgtgcag	agatttcgga	acagcagcaa	acatcggcag	ctccttgatt	180
tgcatgaact	gatcgaggct	tcgagagcct	tcttatagtc	tttcttctcc	atgtagtaac	240
caccgcattg	atatagtaaa	gatgattacc	cttgagagat	tcattgatctt	cttttgaact	300
tgggctttac	cttacccttt	tgatcaggca	tattgtccaa	ctgtcggcct	tcaaataaaa	360
cggcaaaatg	cgcagcaaag	catcgttcat	caagcacgat	ccggctcctg	attcacagtt	420
tgcttgagat	tctctggatg	taaagagtct	ctcttccacc	tgaccggcca	caaaccaagt	480
cttggcatcg	tcacgcctcg	gggttcttca	tggttccacc	gatccagcgt	acgagctcg	539

(2) INFORMATION FOR SEQ ID NO:1148

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 988 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...988

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1148

gaaaactatc	ccgaggacaa	gaccggaaga	gaatggcagc	cgtgaaacat	ccggaaagat	60
gagtctgccg	gcgtacatac	gattactttc	gctcgcgact	gtacatagag	aaggaggatt	120
tcattggagg	tgctcccaag	taatatcccg	aatgacgccc	gggcaggaag	tacgcttgaa	180
gagttcttac	atagtcgttg	tacgggatgc	aaaaaggacg	aggacggaaa	cgctcgtggaa	240
gtatagccga	atacgatccg	ctgacgctgt	ccggtatgcc	tgagagcaac	cgcaagtaaa	300
gggtaccatc	cattgggtat	cggcacagca	cagtctgccg	gcaagggtacg	actgtacgat	360
cgtctcttca	ctgacgaaaa	cccgtcggac	ataaagacaa	gacactggcc	gagatgctga	420
acccggatcc	tctcaagggtg	caaaaaactg	ccgagtagag	cctttcctcg	cggtatgccg	480
tccgggatcg	acttccagtt	ccagcgcata	ggttacttca	cggtggatcc	ggatagtcgc	540
cgggggcatt	ggttttcaac	cgcacggttt	cgttgaaaga	ttcttggcga	aagcccaaaa	600
gaacgcataa	aggacattat	ttatctcact	cgcaccttgg	gatttattca	gtggtgcctc	660
gcgcacctga	actattggac	tatcattttt	tgatggccat	cgagagttcg	tttattccgt	720
tcccgtcaga	gattatgtgc	ccccggctgc	atggatggct	gccacggggc	aaaatggact	780
gaacttttcc	tcgttatcct	gttcgccacc	atcggtgccg	gaataggagc	tgcgtaaact	840
atatactgtc	tctattgctc	ggtcgcccta	tcgtctacgc	gttgccaaca	gtaagctcgg	900
gcatttgtgt	ctgatcaacg	aagaagaaag	tcgatatgca	gagcgatatt	tcgacaagaa	960
cggagctgtc	tccacactgg	aggacggt				988

(2) INFORMATION FOR SEQ ID NO:1149

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 557 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...557

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1149

cagactcacc	gatgtgcata	cgatgctcgg	tcgatgcgcc	aatgaacaag	gcgaacggaa	60
acagccatat	cccatctgcg	ctatgccata	gaatacgaag	cggcaacagc	gaggcctgcc	120
tgctccttgc	tcaatgcttt	gaaaagaagg	caaccgcacc	ggtgcgatcc	acatgtaccg	180
gcgtgtcctc	gacaagaaaag	agcaagtacg	gcgaaaaacg	acatagaggg	cttccgccga	240
ttggcgaaag	acggagcagg	ctatccctcc	tgaaagccga	cgattcggag	gacgggaaac	300
cgcccgtaga	cattacgtat	atacattcat	tctccggaac	gatcgaaatg	gagacaatca	360
ttggcgaaac	tattgttttg	tgctcattgc	caatttttac	atccccatac	ggctactttg	420
attataggaa	gtttcgactg	gatccttcgt	gccgtttctt	ctcaccgaca	acttccgaca	480
acgaccggtt	acactcctcg	aaaaggaagc	gcagaatccc	atthttggga	gattaatggg	540
ttttggctac	tttggtta					557

(2) INFORMATION FOR SEQ ID NO:1150

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1076 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1076

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1150

cggccaaggt	tttgaagaa	gaacgaatca	cccctaccct	acaatcgatc	gagatacggg	60
catacgcata	cgcaattcca	agttgccgga	tccggccaaa	taggcaatgc	gggcagcttc	120
ttcgtaaatc	cggtgggtatc	cgccgagaat	tcaataccct	gcaaaccgaa	tatccctcca	180
taccaagcta	tcctcaccgg	atggcagcgt	gaaagttccg	gccggatggc	tgatcgagca	240
atgcgataca	aagggcatcg	ctccggtgca	gtagggtgtct	atgagcatca	ggcttgggtct	300
tggtgaacta	tggcggagct	acgggcactc	aggtgggagc	tttgcaagaag	agatcatagg	360
caatgtccga	cagaaattcg	gaatcactct	cctccggagg	tcaaatacat	tttataatat	420
caagtagcaa	gcctttttgcc	ccatgcgttg	catattatta	ggctcaggca	ccagcaccgg	480
cgtccccgaa	tcggctgtca	ttgtagggtta	tgctgtagcg	aagacaggca	tgacaagcga	540
cccgtacttc	tctttttata	atcacggatg	cagggaaacg	aatcctcacg	actgcagccc	600
ggactttcgc	caacaagctc	tgtttgccgg	catcgatcgc	tcgatgccgt	tttcttgact	660
cacgaacatt	ttgaccacgt	cgggtggctcg	acgatctgcg	caccatctgt	tggcatcgcg	720
aacttgctgt	ctatgcgaac	agaatgtatt	ggactccata	cgcgacaggc	tgcaactatgt	780
attcgcaaaa	atccttatcc	gggcactcct	ctactgaaac	tatgccgaag	taaaccggat	840

691

tgccggtttca agtggcagac ctgacggtag agcctcttcg aaaatgcatg gncaggttgc	900
cgatactcgg atataaaata ggagnagatg gtttccttac cgatatgaag ggatatagca	960
gcagaagaat tcgagtgcct aaaaggctgt cgacttcttt ttatcaacgg gcttcgctac	1020
cgaagggaac atccttcgca ccagaccata gacgaggcta ttgacacaat aggaca	1076

(2) INFORMATION FOR SEQ ID NO:1151

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 467 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...467

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1151

cccgatgaatg taccggagag attgatggcg aagtgcctcg taggaagtag gtagcaacga	60
aatagccgta cagattcgga gtgcgtacat agtctttcca gagatctcgg cttgtcccgt	120
tgttttgtcc gcttccacag cggataatg ctcccgtagc ggcttctctg ccattgtaccg	180
ccgagctgga ggtcgacgat ttgtttagg cgattcttcc ctccagattc acaccatata	240
ccttcatact ccattcctgt cgtttagat ggtacgaatg atccattctt tgctctgctc	300
ggtgggtttcg accttatcgg atgggttgaa ctgattgctg ataagggtgga gaaggcttct	360
cccatgatat tgaattgcca attcgtcggc tctgtgggta ataatcgaaa gaagcactga	420
tgcttctcgtg gaacgttctt cttcagattg gggggaaaag acacgct	467

(2) INFORMATION FOR SEQ ID NO:1152

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 543 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...543

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1152

cgcgaaaaggc	gcgatatttta	tcgcacatat	gttcgccaac	tactggattg	ggacgggcat	60
atatcgccctt	cgatacgccg	gaggaactgg	aagctcgga	gccgaggtgc	ccaacttcca	120
atacgatgcc	actactcgtg	ggcaaactgc	aactctctga	caactgcctgc	cgaagaagtg	180
gagcgtctcg	ttgccggggg	acgcagtatg	tggttcgttt	cctcgtggag	ccgaatttgg	240
acgtaaagtg	aacgacctga	ttcgcggacg	agtgggtgatc	aactcttcca	tcctgatgac	300
aaggtgctgt	ataaaaagtgc	cgacgacttg	cccacctacc	atcgggtcaa	tattcgtgga	360
cgaccattct	gatggaaaagt	gagccatgtg	atcgtgggtga	aggagtgggt	gcccagtgc	420
accactttca	tggtactgct	caatcgtgct	tttcggttgg	gaagatacga	atgccgagat	480
ttgccattt	gcactggctg	cttgaagccc	gaaggaaacc	ggtaagctgg	agccaaacgg	540
atg						543

(2) INFORMATION FOR SEQ ID NO:1153

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1119 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1119

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1153

cgggcggggca	tgcccggcaa	tgcgggcgat	tttccctcog	aagaaacatc	tacaccttta	60
tcgagccggc	tctctgcttc	tttacggccg	agacgaacac	cgcagctcgc	tttcaaccctt	120
cggcatacaaa	ctgtccgacc	gcctgacggc	aaacgcgtcc	atctcgatat	ttcggacttg	180
ccgatgaaaac	gcgggatata	acgaaccgca	acaaatttgt	cctgggaccg	tcgggttcgg	240
gaaaacgttt	ttcatgaacc	atctcgtacg	gcagtattac	gaacagggaa	cgcagtgttg	300
ctggtcgata	cgggcaactc	ctaccaggga	ctttgttcgc	tcaccaccgg	aaaacgaaaag	360
gtgaagacgg	catctatttt	acctatacgg	aaaggagccg	atttcgttca	atccttttta	420
taccgatgac	ggggtgttcg	agtcgaaaag	aaagacagta	tcaaaacgct	gctttttgacg	480
ctctggaaaa	cgaagaggaa	aaaatatcga	aaaccgaatc	gggcgagctc	ggcagcgctt	540
ctcggccctat	atccgcctga	tcgggttcgga	cagagggata	acgccgagtt	caatacgttt	600
tacgaattca	tgccgcgatac	ctaccggccg	gaactggaaa	ccgcgagatc	aaagtcagcc	660
gggaagattt	caatatcgac	aacttttgac	tacgctccgc	cagtactacc	ggggcggtcg	720
tttcgacttc	ctgctaattc	ggacaaaaac	atcgacctcc	tgtcgaagcg	gtttatcgtc	780
ttcgaatcga	tgccatcaag	gaaaaccggg	aacttttccc	cgtggtaacc	atctcatcat	840
ggaggctttc	atcaataaga	tgaggcgact	caaaggcggt	cgaacaact	gatcgtcgag	900
gaagcctgga	aagcgatcgc	ctcggccaat	aggccgacta	cctgaagtat	atgtacaaaa	960
cggtgcgcaa	gtatttcggg	aggcaatcgt	ggtgacgcag	gaggtggacg	acatcatctc	1020
ttcgccggtg	ttaaaggagag	catcatcaac	aattcggatt	gcaagattct	tctcgaccgc	1080
gcaagtatgc	caacaaattc	gaccagatac	agaacctcc			1119

(2) INFORMATION FOR SEQ ID NO:1154

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 855 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...855

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1154

ttctgccgaa	gagaccaatc	ttatgggcga	cctgatgcaa	tggactggaa	gaggaaacat	60
ccacattcaa	accgttctgc	atctcaacaa	aggagatgca	atgctcgtgg	acacataggc	120
acagaactga	acaacaaacg	gaaagtgcct	gctcatcacc	aaggacaaca	gtgatgctga	180
caggagcggt	gtctcaccgc	catcattcgc	tctaagcctt	tccctccctt	tgcgtttagg	240
ctcacgaagt	agacaacatc	tgctacgcg	agttagacac	agacttcacg	gccaagacgc	300
acagcctttc	tctaccaag	aactaagtgg	tgaggagcat	cgccagcctt	gcgagaagcc	360
tttggccagg	cttgtgagtt	gggctatggc	gactattgaa	gcgactcagc	tcatacact	420
taggtgtcag	tggtcgacct	ttggacagac	gaagctcaaa	gaattgctcc	gctttctcgt	480
gaacaaacgt	tgctcgtcaa	ggctagcaga	ggacgctatc	agttcaaccc	agacttccat	540
actgacacat	cggttcggtc	gggcgcaggc	tatatatgcc	tgaccaacga	ccaaccataa	600
ataaagaatg	gtcggacgga	aggagtgcct	atagtaacgt	ccgaccgacc	aaagaagaac	660
cgccaaagaa	aaaacagcat	gcagctcagc	acatcaagca	agtctccatc	gtggactact	720
tagcacaagc	tggcttgaag	caaagctcat	caagggcgtg	aactattggt	attgctcccc	780
tctagctcag	agctcacgcc	ttcgtttaaa	gtcaatgcag	agcgcaacca	atgtatgact	840
tcgccacagg	agacc					855

(2) INFORMATION FOR SEQ ID NO:1155

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 2555 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...2555

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1155

attgtaaattg	aagctataag	tcccaaacga	tgataatcac	cgggaatgaa	aagccggtct	60
tgcgcttacc	caagatgttg	tatgagggat	tgacaaggga	ttgcgagtaa	tgctcgtagt	120
gaatgtaatc	ttatccaaac	gacctttttc	gccagtttct	cgaagacgat	acgagtcaag	180
aagacagccg	taatgaagaa	gcgataagac	cgataatcaa	cgtagtggca	aaaccgcgaa	240
tcggcccgtc	ccgtagagga	ataggatgat	accggttaata	atagtcgtaa	cgttgagtcg	300

aagatggcag	agaaagcggt	gccataacca	tccgtaacgg	cacaatcgga	gtcttaccgg	360
cacgaagctc	ttctttgata	cgctcgaaga	tagtacgttg	gcataccacag	ccataccacg	420
cgtcagcacc	aaacctgcga	tcccagagag	gtcagcacgg	catggaaaga	agccaatacg	480
cccaatgtga	gaagctgttt	acaatcaatg	cgccgtttgc	gataagaccc	ggcaagaaac	540
gtaagccaga	cacatgtaac	acatcaggat	aaccaaagcg	agcaggaaga	caagaatccg	600
gctttaatgg	actcggcacc	cagcgtagga	ccaatcagtt	ttcctgttcg	atgcttaccg	660
tagcatccat	tttaccggag	ttgagtcgtt	ggcaaggtea	cgggcctcct	ccacggtgaa	720
gtgcccggag	atctggagcg	accgcccgtg	atctcatcat	tcacgttcgg	agcagaataa	780
accaaccatc	caaaacgata	gcgattgccc	gtcccacgtt	atcctttgtg	atagcgccca	840
tttacgagca	ccttcttcat	tcatcgtcat	cgaaacgatc	ggtcggaacg	accgaagtca	900
ttttggatat	cactcttggc	ggaagtcact	aatcacctcc	caaatcagga	tctcccgtac	960
gattggtacg	aatagcatag	gttcgtagag	gtcgggtctcc	tttttggttt	cgggggtctt	1020
gattgctttg	caccccagag	gaaaagcaca	tcttcacgtg	taaccttcag	atcgtgagtt	1080
gctggagcat	ttcagatatc	tgagccatat	tagcacgacg	agccacacca	ctactgcacc	1140
gccacgattc	acgggagtaa	gcagagagaa	gagtgcctct	tacgagtagc	atccttggcc	1200
tctttttgtg	ctacagtagc	agaatagcta	cagcttgtao	agcagcagaa	tgggtgttg	1260
cagctacaga	gtcatagttg	caggctctgt	ttccggggta	gcatacgtgt	tgttcatagc	1320
caatcgctca	gacgatcatt	ggcagcgatc	aagtctccgc	tgacctcttc	gatttgatg	1380
tacgccagaa	ctgtaggttg	gcactgcgtt	gcaaaagggt	agaacacgct	cagggtcttt	1440
cactccgggg	agttcgacaa	ggatacgccc	tgcccttcca	atcgctgcaa	attagggtgca	1500
accacaccca	aagcatcgaa	cgagcacgga	gcacattgaa	cgaagcttct	acagcactat	1560
tatatatttt	ttgagcagac	gcactacgtc	tgcataccgt	gactttgcgg	taatctgtcg	1620
cgaaggtcac	ccgaaccgaa	gataacggcc	aagcgaccgt	tgggatgagc	ttgcgatatt	1680
ccttcacgaa	aatatcgatg	aagtcggatt	gctcctgctc	ttggcagcat	tctccagagc	1740
tttggtgaag	ttgggatcca	aactttgtta	gagagggtac	gaagcagatc	gcttgcgtaa	1800
agtttcaaga	taagttcata	ccccccctta	agtcaaggcc	aagaccaatt	tgctgggctt	1860
gacttctttc	agcgtgtagc	cgaaccagac	cttctcattc	gacatggaat	cagataggcc	1920
attccggcaa	catcgcccat	cgccatagcct	ctttcgtaac	gttcgtaacg	aaagagaatg	1980
acaggtaaaa	cgcacagatg	atggccagac	cgatgtgata	acaatcncaa	atcctttgtt	2040
ttgcattttg	tctgttacta	ttttattgtt	agattttttt	catctataca	ggcatattca	2100
tagggcgaaa	gttacgtttt	tttttacact	atctctcact	ttatatatag	aaaataccga	2160
tgattcgggt	catcggcagc	aaaaacagtg	ggacattgcc	tccgtcagca	aatgattggg	2220
tggctctata	accaagagcc	acagcaagga	tactcagcct	acccacttcc	gagctgcttt	2280
aagagcgatt	tttcgaaagc	gattatggca	aaggcttctg	cttcatatgg	aaagagcaaa	2340
cctgccggta	gcaaggcgac	ggaaaaggct	ctgcgcagcc	gtattggggc	tatacgatc	2400
ttgcgtatgc	aagtgcctcc	ttgttcgcga	gctatcgtct	cggcagagaa	agcatggcag	2460
cggcataccc	cttgcggagc	agagaggaat	gaacaccag	cgggtgtatcg	tataggcttt	2520
cccttcggtc	tgccatggca	acgagccgat	tcgggc			2555

(2) INFORMATION FOR SEQ ID NO:1156

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 555 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...555

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1156

ccggccttga	tcgtcgaatc	catgcgtcat	ctcgtgtccg	atcactacgc	gataccgcca	60
taattgacag	catcgtctgc	atccatgttg	aagaaagggg	ttggaggatg	gctgcaggaa	120
aacaaatttc	gtttgtggtc	ggattgtgta	ggcattgaca	tcctgaggat	tcacagcca	180
acgctcgoga	tctacatctt	gccgagggtca	gccatattgt	cgtcatgcat	ccatttgctg	240
gcgcgttgat	atcggcataa	tagctgtctc	ccttgatttc	catcttgaa	tagttttcca	300
cttgctggga	taacccgatc	ttgatgatga	aggaattgag	tttcctgag	ctttcatctt	360
cgtgggagtc	gcccattccat	gtaagcatgt	tgtacgtctt	ccgagggccg	tttgcagggt	420
cttgacgagt	ttgagcatgc	gtcttttgc	tcgggtgggg	aaagtattgc	tttacataaa	480
cttcgccag	gcttcgccca	gaaagctgct	taccatacct	acggaacggt	tccagcgaga	540
tgctttcggt	ggttc					555

(2) INFORMATION FOR SEQ ID NO:1157

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 436 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...436

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1157

cgagcctctg	cctgcctcta	ttctggcttt	gcccagacaaa	cgcggcgtga	agacaaagta	60
attaccttcc	tgggacgaat	cacgatgcag	aaaggcccga	atacttcgtc	gaagcagcgg	120
ccaaagtact	cgaacgcaca	tccgacgacg	cttcgtaatg	gccggaaacg	gcgacatgat	180
ggacgccatg	atcaggtggc	tgcccagacac	aagatagccg	accgcttcca	cttcacagga	240
tttataaaag	cgaacaggtg	tacgaggtat	ttaaggcaag	cgatgtctat	gtgagccatc	300
cgtntccgag	ccattcggca	tctctccact	cgaagccatg	caagcggagt	ccccttcatt	360
atttccaaac	agagcggatg	tgccgagatt	ctgattacgc	catcaaagtg	ggactattgg	420
gacattcgat	gccatg					436

(2) INFORMATION FOR SEQ ID NO:1158

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 466 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...466

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1158

```

cgcaaagcgg aatccctcgg cggagatctg tccgaaatag cctgtttgct agcatggccg      60
cctcggcacg ccttttggtc aatccgcaag aacgctggag acatatggag cagagagcag      120
ccgacagttg gctgtcgccc ttgaagcaac cctgctaata cgcgagccta cttcctgcag      180
gcccaaagcc tgcgtgcacc cctgcgcagt tcggaggggg caaggacaag gccctccctt      240
ttgccagaag agcgtgtcct gctatgctgc ggccacagtg tcgcctgcct atgcccgaac      300
tggggagagc atctaagcac gccaaactcct taatgctttg caagcagnaa acccaagagt      360
gactttgcgg ccacggtct cctgatcgag aactctataa cctgcaatct tcgaaaacac      420
gaaccgaaat cgttccgatt gggcaccgtg ttttctgaga aaatgg                        466

```

(2) INFORMATION FOR SEQ ID NO:1159

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 608 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...608

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1159

```

tctanaggat ccccgggatc attccgcaag gggatgggca aacactatcc tgagtgtctca      60
gaccaatgga aagtactatc agcagtatag tgtcacatta tggatccatg gtttgggggc      120
aagcggcccg gatattgtca gcttcaggca ttctattcca agactacggc gattgactcc      180
aagttctaca atagcatgcc ggcaactact ataatgccta ctataatagc tactacaaca      240
actatatagt tattacaacg gtatgtcgaa ctataccggc gacctctata ctcagccagc      300
gatcccggat cgttcgcttc agatgttagg tacttgcgat ggtacggtaa agcgtttgac      360
ttggccggac aattggttcc agatttatac tttctgaact acacctacta tagactgcga      420
aattggagct acaatacctt caaaatttcc atcatggctc gctaatgata tcaacttgga      480
gcctgcgtct tctcgacttt ccacgataaa tcctatttat accagagccg gatcggatta      540
tgggtttctg gtgctgctac tcttccttat tctttgtggg acaatcatac tatgccagcc      600
agaacttc                                           608

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(2) INFORMATION FOR SEQ ID NO:1160

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 520 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...520

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1160

ctgcactctg acttctctct ttctatacgg tcattaggtg gatttcatgg gcctatacag	60
gtatgtacca tcgcgtggca tgtggacaaa ggagatatat tccatgagga gtaagcacga	120
ataggcattc gatagcttct ataacgttaa ggcacccacc cgattctttc ataaatcaga	180
tgggtgcctc tgtttttcag cttacaatat ggcattttgg gggctgcgat tgatatacaa	240
atcatttcga tttctatata tattgaaaac gatttatata taaatggaaa atggttatat	300
atagatcggt attcgatata acgagaaaagg tatttcaatc tgaaaaggag tatttccatc	360
tcttttgtat cataaccaga cttcttagag ccgcttattt ggaatgattc taaactcctc	420
ttcgtgttg aaaacttttt tgcacctatt ttctggtcac aataccgatt ttcttaagtt	480
gtttttaagg ctaaagatcc ttctctcttt cagcctgcag	520

(2) INFORMATION FOR SEQ ID NO:1161

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 507 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...507

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1161

gtcatcggca ttgggttttc cgcccggcca gccggtgatg gtgtgctggt gtcggtgaag	60
agcttgatgt tcacctcgta ggccgagccg tatttggcag caattcgccc aatccgttct	120
ccgtatagtc cttgttcgtc agcttcagat gggcttgccg gtcagtcgcg acagccatac	180
cacagccctg cgtatggctg tttgttccag atacagctcg tcaccagcca aggacgactg	240
atcctgtgag acaagacgat gccgatagat ccagcacgat ggaggcattg cgatcaattg	300
cagggacgaa gccggagaag cctcgcaaatt ctttccctcg ataactgggc tattacctct	360
gccttactct ctccccatgc cagcagggtc acttgtgagc tttttggatg gtagccagtc	420
ccatactgat agccgatggg ggatggtgtc gtgggagctg aatatactca gagcatcggt	480
gtgctccgta ggccgagtag gacgagt	507

(2) INFORMATION FOR SEQ ID NO:1162

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 620 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...620

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1162

ctccttccag	tcttgatctt	tgatgaaacc	cagacgetca	agctgtttgg	gtaataagcg	60
tagttataaa	tggtagccat	cgtacccagc	tggtcgaacc	ttcgataagc	atcccttcgt	120
gggccatatac	ggtgaaaccc	attggccttg	cagcatatcc	atccccttgg	agcgtgcccc	180
ttcggatacg	gcatggaaa	ggcatctacg	acttcattgt	cgttgatgaa	atcgacgaac	240
ccgaacgagc	gttgttctga	ttccaagttt	cattggcacg	gtgattgac	atacggcgat	300
gcgtcccacg	atccgcccct	cacgataagc	caagaaatag	atgcttcgca	gaactcaaaa	360
gccggattgc	ggtctttgtc	caaggtcac	attcatcatc	gatcagcccc	ggcacatggt	420
agggattatt	tctatagaga	ttatattgaa	ctgaacgaat	ttcttcagct	cggtttgtc	480
caatacttct	ttatttctac	agccataaaa	ctcgtattta	gtttacctaa	gtagtcaaa	540
ttacaccgga	ttttggacct	ttcacgcaca	aatataactg	aaatagttat	catttattgg	600
ataaaatctg	catctactgg					620

(2) INFORMATION FOR SEQ ID NO:1163

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 558 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...558

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1163

ggttcaaact	ggccaatatg	tacgtacagg	ccggagagat	agacaaggca	tatacatata	60
caaccgtatg	gaggcacaaa	atgctgtcaa	tgcagcagtg	cctccaacta	tgctgagatt	120
cgggcacgtc	tctacctgat	gaccggtaga	ccaacaaggc	tctgaacgaa	cttcgccgtc	180
tatgcaatcg	attcccgaag	tgaatgagtt	taggctgaag	tatgccggca	ctctgctoga	240
cagtggaagt	acgacgaagc	ctacgagcaa	ctgcaactga	tagctcggac	ggatcgacaa	300
gtggcttgta	tcattttgct	atggccagct	attacttggg	aacaacgaaa	aagaagctgc	360

catcaacgaa atgatcaaag tagcccgctg acaggggatg tggcaccggg agcagaaact	420
acccgatcat cctgcgcttt acgggtaccg acacagacga agaggggatgc accgaaaaaa	480
ggagtataat tctgcttga aaagatactt gccagccatc cacttgaggt gggatgcacc	540
ctttctatg ccgagctc	558

(2) INFORMATION FOR SEQ ID NO:1164

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 915 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...915

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1164

ggataactaat ggtctcatc gagaggatac tatgggtctat tgatggaagt gctatctgct	60
ctctgnccgg atggcaggtt cggggagaga ggttcgcttg agctgtaaaa ccctgtcgca	120
cggcattttt ttggagattt cattgtcatt gactgatttt tcagtgtcgt tatagatatg	180
aatacctcta aagctctcca tgacttgtgc gttacgctca taagtacagt caaaagcaaa	240
aaagtgcctt ttgattggcg actttttcag tttgcatatg aaggcaaacg cgataagaga	300
gagcgggaata tcaactccacg gctatcgtaa taagatgata gtcaggggga tgccaccaa	360
agagaacttc tgttttggga acagtttata cgcccccgcg aaagtgggga tgctgatatg	420
gtatttcacc gagacgaacc gacagccacg acaataaagg cagcaatgaa ctgtatgatt	480
tcgatcgga agtcgtgtac atgagtccca catagaccgc tctccgac aggcacgcct	540
ggcatatata tccctgcgga aaataagcgg cgtctgattg atcagaattc ccgaatcata	600
ccaccgaacg accctgtaat cgtaccatc gcaatggcag ccaccacgca tatccgcact	660
cgaaagtttt agccacaccc actatgtgaa caagcctatc ccgacagtat cgaaaatgaa	720
aaccgtatga ttcagcgtac tacatacttc cgaaatacaa tcgtgaagat gaagagcgag	780
cataagataa aaaggtagga aggccggagc attcaaaacg gcgggacatt aagaaaatgt	840
cgcgcacctg accggcacca acagccggaa ccacaccgac caataggctt cgaaccaatc	900
gaagcgctcg gcttg	915

(2) INFORMATION FOR SEQ ID NO:1165

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 407 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...407

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1165

ntaaaggatc	ccccgatca	gattgagaaa	ctcttcgcga	gtggtcgatc	ctcaaaagct	60
cctgtaaagt	cactggtcgt	agtcagagag	ttttgctttc	cactccacgc	atctgcatgc	120
acatgtgctg	tgtttcgata	acgacgacac	cccagagagg	ttcagcgat	tctggatgca	180
ctccttgatt	tgtgtatcag	ccgttcctgt	acctgaagac	gacgggcaaa	tacatcgacc	240
actcgggcaa	cttgcctcag	ccggttatat	accgattggg	gatatagccc	acatggcctt	300
accgaagaac	ggcaacatgt	ggtgctcaca	cattgaaaag	aaacgatgtc	cttgacgatg	360
accatttgct	gatagtcttc	ttcgaacatt	gcgcgcgaag	gatggct		407

(2) INFORMATION FOR SEQ ID NO:1166

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 517 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...517

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1166

gtgaatagct	ccacgattcg	catctgttcc	gttcggtgct	catcgacaag	gttttgtatg	60
cttcgtaggg	ttcgcgcccg	aagtggccgt	atgtgcgctc	tcttcgtata	tcggattgcg	120
gagtttcaat	cgttgctcga	tggcgtagga	cgcatacga	aaatcttctt	gatcttctcc	180
gctatttgga	catccgtaga	gccacatgac	tccggccttt	cgtattgacg	tatatgctta	240
ccggcctgct	acaccgatgg	cataggctac	ctgtacaagc	atttcgtcgg	ccaccccgct	300
gccaccatgt	ttttggctat	gtgtcgggcg	gcataagccg	cgggcgatct	accttgagcg	360
ggtccttgcc	ggaaaatgct	cctccgcat	gaaagccctg	cctcataagt	atccacgatg	420
atctttcgtc	ccgtcagccc	ggtctccatg	tggccctcct	atcacaaact	taccgtagg	480
attgacgaat	ggcgtacctt	tttcgtcgaa	tagggct			517

(2) INFORMATION FOR SEQ ID NO:1167

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 668 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...668

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1167

ctcctcggt	tagccctcta	tgcaactgat	gaanacgcat	tcaacaggat	ttacgcccct	60
tcttaacgat	ggaaaacctc	ctgaccatag	ccgaaggctg	ttactttag	gtatactgat	120
ctctgccttt	tcggcacgtg	ctgcaacaac	aaatatatcc	gcatggatgg	aggcaaaatg	180
cacctcgat	aaggcaggaa	tattgacaaa	ccaactaaga	caatcaaaca	gcatactatg	240
cttttgggaa	aaagaacttt	atcttgatgg	gggtgtccgc	tatcctcatc	attcgggctt	300
catattgatg	tcagggggag	gatcagccga	ccaagtaagc	ttcatccgga	tattttcagt	360
gccaaacgca	tacagatagc	accgtgggtg	agatggccgg	cttcgtactg	atgggtatatg	420
ccatcatggt	atcgccggat	aaaaagacaa	tcgcaagtaa	ctctccggcg	agggtccttc	480
tgccgatcag	ccgcaaccgc	acgttggtgg	ggagtaattc	tatgcctgat	ccgagaaggt	540
gtacctctct	tcttgcata	taatatgacc	attctacaag	ctcatcgta	gccatagtcg	600
aaggctgacc	gagttcttcc	ggttcttcaa	cggacactga	tatcgccgaa	gcataatggg	660
gtggaaag						668

(2) INFORMATION FOR SEQ ID NO:1168

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 387 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...387

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1168

eggcaaatcc	actttgttta	caatagggat	gatggtcagg	tcgttttcgt	cgccatatag	60
agattggata	tggtctgcgc	ctgtatccct	tgggcagctc	gacgataagc	aatgcccctt	120
cgcaagcagc	aatggagcga	gagacttgta	ggagaagtcc	acgtgccccg	gagtatcgat	180
caggttgagc	acatactttc	tccatccatc	tcatagtcca	tctgaatggc	atggctcttg	240
gacgtatac	ctctcttctc	gttccaagtc	cattattgtc	caagacctgg	atctgccaag	300
atctttgccg	gagaccgggtg	gttggtatat	tcgagcaacc	cgacggccaa	ggtactcttt	360
gcccgtggtc	gaatatgtgc	aatgatg				387

(2) INFORMATION FOR SEQ ID NO:1169

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 562 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...562
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1169

aggatccccg	aaacgtttgt	aggcaaaaat	acctgccaca	atgataaaaac	gcccagaata	60
accaagccga	ttttggtcat	gtttttttct	atgaactgtc	tgagcgtgaa	accacttctc	120
ctacgtgggt	gtcccggttg	ttgatttctt	ttttagccat	attatggaat	aattatttat	180
ttcttttcgg	tcgcacaagg	tacgcgtttg	gctgtgatat	acaaatgtcc	tgtccgaata	240
aatatcgata	tgtaatggtt	gacgaaaaac	gtttcttctc	ttcttgccct	caattccgat	300
ttacttgtct	tctcttgagc	cgtcaggtag	ccgaaaagag	agcattgcca	atccactaat	360
ccgctcttta	cggcataccg	tatcagttcg	gcgcattggg	gaatcccagt	ttgtgcagaa	420
tattactacc	ggtgtgtttc	tccgttcggg	aactaaagggt	gcattttttc	ggctgnttct	480
ttggcagaat	gccatcgcac	agatattgga	ctacttcttt	ctctcgttgg	gtcaagctca	540
gaagtcggtt	ctgctgctgt	gc				562

(2) INFORMATION FOR SEQ ID NO:1170

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 658 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...658
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1170

cggattgttg	taaaataaaa	agattaggaa	acggatattt	tccggtgaga	cctactttct	60
gtagattgt	aagcagttta	tattaaatcg	tatagtga	aggctgtttg	tgagatgata	120
aaacgtaggc	accggtcaaa	ttcgtagaga	attcgacggg	tgccttatta	gtttggagga	180
tgagcgagga	ctattgattt	gaaaatttat	gctgttgctt	tgtctttttc	tttttcagga	240
ctgttcatta	gaaatcggat	gatgttttgg	cagggtttct	gagggcattt	atcttttgca	300
gagcattgaa	tgagacctgt	tgccggatgt	ggaatccaaa	gatctatagc	catcttttcg	360
ttctatctca	cgtcggtttt	cgtgtaaagg	aaattgcgaa	tttagtttgc	ttgaaaagca	420
gtggttttga	gcaatattcg	actgtcgatt	caggcttata	ttcttcgctc	attacactat	480


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atcgatcaca agctaaaggg attgtaccgg ctctaattgcc tttaggggat tgaacttttc 540
cttacatttg tccgcgatga agctctctat gaggagttga atatcgcttc ctgagagcct 600
ttcatccgaa tgaaattata tagataacga ttaaattgtag ttagatatgt gctgcgaa 658

```

(2) INFORMATION FOR SEQ ID NO:1171

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 649 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...649

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1171

```

cgcgaaaccga cccgtcgcaa tacggcaccg tgcacgcgat atgccagctt cacattttacg 60
cgcgcaatcc caaagccaac ataatcgtag ctccctcgat catctgatcc tgcgcgaaga 120
cgaattcggt cgtgctgcat cggaagcttg gagttcgtag ccgatcacga gcatctcgtg 180
acgctcggca tccgtcatcc cgtccggaga cgggctatgg atatatccaa atggctgaag 240
aaaagccggg gattttatcc gtgtgaaaac ctttacggag aagcccaatg ccgaatggca 300
agcatcttcc tcgccagtgg agaattcctg tggaaatagtg gaagttcgta tggaacgtgg 360
agagcatcct tgccgcattc cgcaagcacc tgcggaagta acctcttctc tcgaaaatgg 420
cttggcacac ttcaatacac cgaagagcgg cgtttcatcg atcaggcttt cccctactgt 480
ccgagcattt catcgacttt ggcgtgatgg agaaggcgga caatgtcttg gtcatgccct 540
ggacttcggc tgggcagacc tcggcacatg gggatctctc tatgagctgc acagaaagac 600
gatgccggaa acgcatcgct caagacgcgg acgctctcta cgaggccga 649

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(2) INFORMATION FOR SEQ ID NO:1172

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 808 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...808

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1172

```

cgtcggcgaa gtagatctta cctcttacct cttctgttct gccaatgtct tgcagataca      60
ttggcaccgc tcataacagg agggatgcaa aaaatagcgc caacagaaaag agaagagagg      120
actacatoga gactctcgga gaagggctag accttatctc tacgttattg ttgctaccgg      180
caatatatat gaagacttgt tcaagcacia gcagctgctc gccaaaggagc cgatattatt      240
gccgtatacg tactacggga cagagtttgc tcgactatgt tccttacgga gctagacaga      300
aggattcggg ggtacttttg ctacacaaga aaacttccgt atctgcgaaa agccttggtat      360
gaggttggag aagaggttgg tcgatatatc agctctgcaa ctattgttca ggtctttgca      420
tgccggaaat agccgtaatg gagcactcga aggcttggtat gtaatgctca atgatgctct      480
ctatggaatt tttccgaga cattaatatg caacgtactt tgggtggatca atacatgagc      540
gtgttatcaa tggatttgcc ggcgttatca tcaataccgg tgaggatact acctaaccac      600
tgctgatgcc gtagaagaag cacataccgt acttgccggg atttgatcaa tgagcagctg      660
gctcttacag ccggattgcc ttcagacaga tggggcttgg acatgcattt gaaatggatc      720
ccatgctcga gaatgattcc ttttcgaatt ggtcaagca caaatgacca gagaaatttt      780
cccaagctcc gcttaagtat atgcctcc      808

```

(2) INFORMATION FOR SEQ ID NO:1173

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 317 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...317

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1173

```

cgcgccctgag ttttgagacg gctgtgaacc gcctcggagg ccgtatcatg gtttttcgga      60
tgcateccacc tccagctcta cgaaaggcga atcgctcagg ataccatttc catggtgggc      120
aactatgccg atctgattat tatgcgcact atctggaagg ggcggctcgt tatgcttcgg      180
aggtaagccg tgtgccgtag tcaacgccgg cgatggagcc aaccagcatc cttcacagac      240
tttatggatc tctattccat tcgcaaaaaca cagggcacgc tgtatgacag gacttcgcta      300
tggtagggga tctcaag      317

```

(2) INFORMATION FOR SEQ ID NO:1174

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1552 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1552

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1174

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ggaagtctgt tatgctgggt gcgaagtacc ttgacgtatt tccgtagctt gcagagagtt      60
taagaaaata cttgttcccta acgtcctcaa tgatttgaat gagtcctctc gtagctatct      120
tgaccgttat cgtctatttc gtcttccttt cggattttcc tttgtcacgg gccgcaaagc      180
ggataatgcc ggcttcttgt gggcaatgcg aaatccccgt ggtacatggt ggctttttgcc      240
atgatggctc cggatatatcg ggagtaacct tcgtatccgt gccgggcatg gtggcggcag      300
cggattctcc tacctgcaga tggtagctgg ctttgtggcc ggaaactgat tattgccttc      360
gtcctgatcc ctctcttcta ccggatgaat ctatgtccat ttacggctac ttgcaagagc      420
ggttcggatt ctcgtcctac agacgggggc atggtttttc ttcattctcca agatgctcgg      480
tgccgctgtc ggctttttct cgtatgcctg acgtcccaac tgatcgtatt cgaaccgttg      540
gatggccttt tatggccaat gtgtgcctga cgatgctctt cgtctggcat atacgttcaa      600
ggcgaggagta aaatcctgat ctggaccgat tcgttcagac cctctgcctc atcgtctcgg      660
tcgtactctg catcgtctat atttctccga cttggggcag agatggggag gggcgaccga      720
ccttatcggc gggaggacta ctcccgtatg tttttcttcg atgacgtgaa cgacaaacgc      780
tattcttcaa gcagtttctg gcaggcgtat tcaccgtaat agctatgacg gggtaggatca      840
ggacatgatg cagcgcaatc tgagctgcaa gaactaccgc gatcgagaa gaacgtcctc      900
accggcggcg tgatgcagtt cttcatcata gactcttctt catgctcggg accctgctct      960
aatacctatg ccgacagcca ggcatcccc atccgtccaa agcgatgagc tattcccact      1020
cttggccacg gcagctattt tccgcctggt gtaggcattc tgttcatatt gggactgggt      1080
cgtcggcttt ctctgcaagc cgttcggcc ctgacggctc tgactactcg ttcacgctgg      1140
acatcctcca agcacacagc caccgaagcg aagagcatcg gctcgtatac gccatcgcgt      1200
gcacatcggc atggtgtctg tcatgggctg gtcataact tctttaatat ggtaagcaac      1260
acgagcgtca tcgagccgtc tacgtactgg ccagttacac ttatggggccg atattgggac      1320
tgttttcttc ggcacgcca ccaaaaggcg agtacgggac agatacgtcc cttggcagcc      1380
cttgttctc cgggtgctctg ctacattctc cagagccatt cgagcaatgg ttcggcgggt      1440
ataaattcag ttacgaactc ctcatcttca tgcttcttt accgccatag gcctggcatt      1500
gttgagccgg aaaaaagaat acgatcatga ttctgattgg agacagcggg tc              1552

```

(2) INFORMATION FOR SEQ ID NO:1175

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 508 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...508

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1175

```

ttgagggcag gatctctgcc cagacggatg ctctctgcca aggatgcat ctacaccggc      60

```

agaaagtccg	agtgagatcg	ccggagctac	gaaaactttg	ccggcctttc	tcgcgtaagg	120
actttctgct	tctctgtcga	aacgctgatt	gcgatccgat	tcgtacccag	cgagcaaagc	180
tcggattgaa	ggtcgtttca	ggttcattgcc	gaaagcgtcg	gtacgtttcta	ctgtcttgcc	240
ttcaagtcca	tctgccggtt	gatgtatcta	ttcccggtag	aaagagaaat	gacctgctct	300
ccagagttec	ttctgttttc	ttggtcagct	tgtagtgtga	gccgtaggat	cgcggaagat	360
cagatcgctg	atccaatagc	ctaattctcc	gacaatatcc	ctacggcagc	tccgcaaagc	420
acatcgctgg	cccaatgccg	atgttcacga	tacggctgat	ccccgtaagg	gagggtacgg	480
tatagcctgc	gcgctatacc	aagggttt				508

(2) INFORMATION FOR SEQ ID NO:1176

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 692 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...692

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1176

ggcaatactt	atcacctcta	tctccgtccc	ggattggatg	tgctcaagct	gccggagggt	60
tgcacaagtt	caatagctgg	gagcggcctt	tgctcacgat	agcggagggt	ttcagggtgtt	120
ctctttggcg	gagaatcgga	agatcacgag	gagggtgcga	ctttccgttc	ccatatagac	180
ggctccaagc	acctttttca	cccgaagggt	tcattggacat	ccagcgcgtt	atcggagcgg	240
acatctcatg	gctttcgatg	aatgttgccc	cggatgatgc	gaccgcgaat	atgccgcctg	300
tcgatgctcc	tgaccggaag	gtggttgagg	cgttgccctgt	gtaaatgcgc	gagacggagc	360
cactctatgg	atatgaacag	cagctattcc	cctcgtgcag	ggatgcattc	atcccgatct	420
gcgcgcgcgg	tcggccgaga	tgtagctgcc	gtcgatgctg	ccggaaatgc	catcggagga	480
ttggccgtgg	agaaccgacg	gaaaagatgt	acgagatgat	cgaactgacc	aacgagatct	540
tcccaaagat	cgtccgcgct	acctcatggg	ggtagggtact	ccgatcaaata	attggaagcg	600
atagaccgtg	gtgtggacat	gttcgactgc	atcatgttac	gcgcaacggc	cgtaattgggc	660
agctctttac	ctgcacggac	catcaaatcc	ga			692

(2) INFORMATION FOR SEQ ID NO:1177

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 992 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...992

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1177

```

gagagaggag attcatagcg tctgtcactc tcctattcaa tttgcgttct gaccactccc      60
actatactct cttccggcac aataccgaga tggcgggatac gggtcggctc gcaggattgt      120
ccgccagaat ccagtagtaa ttgcggcgaa atggaagaaa gccgtttcgg caccgtcgcg      180
gtagagtttt cctcgggaaa gctgatgttc gaactgcact cttcttcgat tgctctgcgg      240
taggcagtaa agacagagga gtcaggcgat aagtcctgtc attcctcgga acgaaatttt      300
atatggctca cgaggaagca aagaggtggg caacttcagt tttgcctgtt tgcgactacc      360
ccaccctttg atagaaacaa ggtgtcaccg ggaatcctat cagccgtgcc agatagaatc      420
gcgagtcggc ttccgcatct ttctgtactt tatgaccaga atatctcccc tgtccggcga      480
tgcaatccga tgatccatag cagctttccg gaccggtagg tcgggagcat ggcacgcctc      540
gaacacgata ggtagtaaca aggaagagac gaatgaggac ggccgacaca gaacgactgc      600
cggcaagcca atgaaaaaaa ttctgtttct ataccgcatt taatctgcat tgaccgttcg      660
catcattcta ccgaagcggg tcttactccg aagagactct tgtccttatt cagggacaac      720
cagatgaata caggctaccg acgatatgat cctccggcac gaaaccccaa tagcggctat      780
ctgcgagttg tgcgattat ccccatcat gaaataatag tccatcttga agggtaggaa      840
tcggccggac ggccgttgat gaagaaccgt gccgtcagct tttgcacgag cttatttcct      900
tcgaaattgc gaatacaacg actgtacaag gcagattcaa tggcgtaaaa cgaaccgtca      960
tgcccttggg ccggatcacg taggaccgta tt

```

(2) INFORMATION FOR SEQ ID NO:1178

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 558 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...558

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1178

```

cgcccgacac actgtaaaat gaatggatca aagtgcctgc ttattgcoga aggtctcata      60
cgtattgatt accttcgttc gtaaaacagt aaaatttaag gcgaaatgga tttgtactgg      120
ctaatacatca tcgtcgcaat agttgccgac tcgtcgatg gctcttccat cgcaggcaca      180
acactgagac agatagctga cagcacaact ggaggctgcc actgagaagc tggcggatct      240
gcaagggagc agaaagaagc catccgtatt cgtaccgaac tggagacacg cttgaggcaa      300
ccacttccga attggaacgc gaatggaac gtcgggaca aattccgaag agatgcaagc      360
actcttcaag gccacggcat cggagatcct cgagacaaga cacggaagct ttccggaatg      420
aacgaagagc gcacgggtga atactcaaac cgctgagtga acacatcaag ctattcgaag      480
aaaaagtcga aagagctata atgaagaagc gcgcgaacgt ttctctctcg ccaaagagca      540
caaaagctca tcgaacag

```

(2) INFORMATION FOR SEQ ID NO:1179

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 401 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...401

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1179

```

cccagcatga agaccataat cttggccatg ctggcgcgta tcgacgcag agcatatcgc      60
ctgccgagac gaggttggtc aggttcagga tacggaagtc ctcagcagtc gaaggatgcg      120
gaagaccatc agcacctgtg ctccgcttag acaagggcta tataggaggg aagtatggag      180
atgaggtcta tgatgcgtaa aaggaaagga tgtaccgcca cggtttatga aggcagtaga      240
tccgcggatg tattcgatgg tgaatacaat ggtgataacc cactcgcacc aatgaaaaaa      300
ttccctcgtg ctatgggaca ggccttacgg tactttctgc tgaacgacaa tgacgctcaa      360
gaaaggatga ggcatagcag gagaatttcg aaaagcggtc c                                401

```

(2) INFORMATION FOR SEQ ID NO:1180

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 789 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...789

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1180

```

gacgcaattc ttccaaagca tcggcttcag ccataaggct attttcttgg cctaacgcgc      60
cagatcatct tcctgattcc ctgtttgctg attatccccg attcatgggg ttggacggcg      120
tgtggtggag tctgccgatc agcgatcggc ctcggtcggt ttgtcttttg tgctaattac      180
catacagatg aagcattcaa tcaatcgaaa aaaactactt tcgcggagta attgccttac      240
aaaacgaatc cttttcatga ctcagataat cttaccggaa cgatgaaagt attttcgaag      300
cctttctcct acaatatctc ctgaccctct acatcgcata ccgggaggac aggcctacc      360
gcaaaagagc ctttggcgca aaggttttca cctctgatgg gtgtagtatt caccctgtat      420

```

ctaataagggt	ttgccggcaa	cgggttttgc	ccgatgccgt	gatgagctgc	attatgtctg	480
tcacaggctt	tggtttgtca	tgtccattta	tgccatgttt	gccatggtga	tcgtagagat	540
gccgtgtcg	tggaacaagc	tttcctgcac	agattcgaca	ggctgtccaa	agagtgcagg	600
ctcgcatccg	attggggctg	ttcgtttcoa	taggttttcc	tcggctttac	tcgtgataca	660
tggactgaat	atcgtgcgct	atcccgtgta	aagcatatgg	acattcgtct	ggacagacct	720
gccatagatg	gaaggagtcc	atgaaagtag	ccctgctcac	ggatattcat	attagcgaaa	780
cggtacggc						789

(2) INFORMATION FOR SEQ ID NO:1181

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1438 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1438

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1181

ctgaagaaaa	acgccttctg	tataattgct	atcggggctt	tgtcgatagg	gagcactact	60
ccccacagag	aaaaaagacc	ggctgcgtac	cctgtccgag	agatgagtat	ggcctcattg	120
acattcggac	agaatgtget	caaggacaga	aacgctacaa	actccacctc	agcgatccgg	180
cggctgtggc	cgggatcccg	agacggctct	cgctctcgct	tcggagaaaag	cccggcgaaa	240
gggcttacgg	agggttggct	tttogacctt	tctgtccoga	gctactttgc	tttttgaagc	300
attgtcccgga	tgggaacctg	cgccggcgaga	tgtatgaagc	gaaatgtgtg	tcggcttcgt	360
agacaatgag	tataacaacg	aagctctgat	cctagaatgg	taaacggccg	tctcgaggag	420
gcacaactcc	tgggttacga	tccttcgccc	actttgctct	tcatgacagg	atggccaaga	480
accccaaggc	gtccaagaac	tactggacaa	actactggat	gcatacaagc	ccaaagcgaa	540
gatgaattgg	agatgatccg	caaattggcc	tgccgacaag	acatccgagt	cgataacttc	600
acgatacaac	catgggattg	ggcatacttc	tcggaacgta	caaacaggcc	cactacgata	660
tggacgatga	gatgatgcgc	cgtactcga	attagggcga	gtcacacgtg	gtatcttcgg	720
cttgccaac	cgaacttacg	acttcatttc	tccgaacgga	cggatgtgcc	ggctctatcat	780
ccggtgtaaa	ggtgtacgaa	gtatcggacg	aagacggctc	ttatatcggt	ctgtctacac	840
ggattttctt	ccacgcgaag	gcaagcaaac	ggagcatgga	tgacaacctc	cgggaccagt	900
ccgaacatca	gcacccgcac	atcatcatcg	tatgaacttc	acccctcctt	cggcggacaa	960
accctcgctc	ctgacagcag	tgaggtggag	actttcctgc	acgagttcgg	ccatgccctg	1020
catggcatgt	gtccaaatgc	cgcttcagct	ccttgctcgg	cacctcggta	gcccgatgatt	1080
cgtggaactt	cccagccaaa	taatggaaaa	ctggctgaca	gagaaaagttt	tctcgacacc	1140
tttggccgcc	attatataac	ggacgaacct	atgcctccga	attggtggaa	aaactcctct	1200
cggcacgaaa	ttacctcgca	gcaaggggtg	atgccgtcag	ctcagcttcg	gctatctcga	1260
catggcatgg	catgattgtc	tgctccgggt	gatgacaaat	tagacatcaa	ggcttttgaa	1320
gagctgcttg	gtcaaaaagct	cttattctac	ctccttcgcc	cccgaatgcc	gtatgagcac	1380
ggccttcggt	catatattct	cgggaggcta	tgcagccgga	tctatggtta	caaatggg	1438

(2) INFORMATION FOR SEQ ID NO:1182

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 364 base pairs

- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...364

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1182

gctgaaaccg	ataagttgtg	tccttcgcgg	gaaacgggaa	gcatagtgcc	gtgcagatac	60
tcgaaccaac	ggatggtgta	agcagtaatc	tcacggattt	cttttcagt	tcggcaatat	120
ccttttcgag	ctgaagcatc	atggcctgtg	cttgggcaaa	ttgaagcgga	ggatccgtgc	180
catgcgtatt	tccaacactt	cttcagatcg	tcgtaggtaa	tggggcgaa	aaaacgatgg	240
gcataggttc	cagcctngcc	tctacatgca	tgagagcatc	ctgttcgctc	tcggctcttc	300
gaactcacga	tctttataga	tacgctcttc	tatgaaaate	cgccgagcga	tgctgccaaa	360
tact						364

(2) INFORMATION FOR SEQ ID NO:1183

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 486 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...486

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1183

tgtggcgcg	attccctgaa	aaagtggcgc	gagaattttt	tcgttggtggg	tgagaatttt	60
ttgcttccca	cgccaaaata	aaaaagttta	cgaaccgctt	ttgaggagta	gcaaacggga	120
aaatttttga	gcctaaacca	attcgggtata	atagtacatg	ttcctgatct	tcttttctga	180
aaaggcttga	taggatgagg	gaactgttcc	ttttttcttt	tgctttgatt	cggctgttag	240
tgaacatgaa	aagagaaaaa	gaagaagcct	cttgccgaga	caaccgagcg	gttctggcag	300
aggcttcctt	atgtattggt	gcaaagtgca	cccatggagt	tctaataccg	agattctaca	360
atatcccagt	caacgatact	ccaaagatct	ttaggtgggc	ggcacgacga	ttctggtaag	420
tcagataata	tgcgtgctcc	aacgtcgaat	ccgagcaaa	gatcaaccct	tgcgacggg	480
attgcc						486

(2) INFORMATION FOR SEQ ID NO:1184

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 441 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...441

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1184

```

gtagaacaga agactgattc gaaaagctcc tgatggaagt gaccacagag gttcgatccg      60
tctgtagat gctcttcgtg aagcagctca aatcttgaat ccacttctc tctgtttgca      120
gagaataaga tagcgataga gtatgtgata tagtcgatac tgatgagttc gatgaagatt      180
ctctgcatat gcgtcactat tgaagtcaaa gctttcaggt cttgacctgt ctgttcgtgc      240
cctcattgtc tgaatgcagc cggagtagat acgttgggcg atttagtgag tctgcacgga      300
gcgatctgat gaagattcgc aacttcggaa agaagtctt gacgagcttg acgaactgct      360
ggcaacgctg aatttgcgt ttgggatgga tacagtaagt ataaattaga taaagactaa      420
gaacgatgag acatatagga a                                     441

```

(2) INFORMATION FOR SEQ ID NO:1185

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 445 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...445

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1185

```

ncggcagtct ggggctggcc atccacagca tccgcaaaga gccgcggctg attttcccta      60
tatgggctat cgtttcagcg aggacgaaaa agcgacgcgc tgcattcggg caatctgggg      120
aaacaggttg agctgacccc caaaaacgcg aacccttcaa aggctacgtc tcaatcgacc      180
cgttgacctg tgagctgtcg cccttcgtgc cgaccgcgtg atcattccgc aagagattaa      240
aagcgcttgc tgaccgaaca gcagcatcgg gacctgaccg aaggtaagcc cgtgaaagta      300
gaaggatatgc tctcgcgtgg cggcaaaccg ttcgatgccg cgctcaggtc aatgccgaga      360

```

aaagaggcat tcgagtttat cttcaacgac aactttcctt caaagaacgc aggcaactct 420
ctcaaaagcc cgcaggcaga ttcc 445

(2) INFORMATION FOR SEQ ID NO:1186

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 508 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...508

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1186

aggatccccg	ggcacaatca	ttaaaagaat	cctgcacaaa	cgacttgcg	aaacaaatcg	60
ctcatgcagg	atgcaacttt	ttcctatcga	cctctctcta	gggaacgatc	actttggctg	120
tgctgtcacc	ggctcgtaca	acgtataacc	ggatgcaact	gcaatgtcat	gatctgcaag	180
caaggcgaca	ttgtaatccg	atgtccttgc	atatacgtaca	cctgaacaga	tgtgcccgcg	240
ggagccccgc	aatgaatata	cgaccggcag	tagcccaaat	acggatctca	tgggaatggg	300
agcgcccgca	gagggtatta	ccggtttggt	gtctttgagg	tacgccaacc	gttgtttgcg	360
tcgtttgcct	gaagccaggg	agcaggatta	ttatctgcat	tgagcttggc	agccatatct	420
ggcagtcctc	attgccgttt	cggcatacct	tgcgatggca	ggtatttcga	ctcccgtatc	480
ctatgccgac	atacctgggt	tttgttcg				508

(2) INFORMATION FOR SEQ ID NO:1187

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 605 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...605

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1187

ccccgcactc ttgagcaggc catagtcgat cgctcgctatc aaagacatac cgtaggagta 60

gctttgagat	tcttcttctc	tttataaatg	tagttgcgtt	gaagagagtc	tcaatgatgg	120
ctgctcgcgt	agacggccgg	ccgatgcatt	ttctttgagg	gcacgcgga	gctcttcgtc	180
cttgaccgac	ttgcgcgcgt	ctccatggca	cgcaggagtg	tagcttcggt	atagaatttg	240
ggcgggtgtg	cgttttctcc	tgcacctcgg	gggtgtgtac	tccactttcg	ccctggagaa	300
tattggcagt	tttttctcct	cgtecttggt	ctctccatca	tcgccgttgg	cggatcgggtg	360
aaagacaagt	gcgcgccagc	cgggcttcca	agatctgttt	cccccggtgg	tttgaactc	420
taccttagct	gcttgtccca	gccgtggtct	ggctgaatat	gcagtcgga	tagaaaacgg	480
ctataaatcg	cgggccacca	gatcgaatac	cacgtcgctc	atcctccgac	ataccatgga	540
tggctgaccg	gtgggaatga	tgcattggtg	tcaagtgate	ttgctatttc	gaatacctct	600
gcttt						605

(2) INFORMATION FOR SEQ ID NO:1188

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 668 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...668

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1188

tgtactcett	ccacggattg	cacttcgccc	tcttcgcgtc	ggatgggatg	ccatgcgggt	60
cgaaaagcgg	atggcccagg	cggactgcta	tccgctccgc	tcttcacg	acagatagtg	120
ctcctcettg	caggcttggt	tatgccatcg	ctgggttcat	agccggagt	ttcggacaga	180
tacttttcca	aaagccgtgg	cggcgaatca	ccttgagcgc	atatttcggt	ccgctttcgg	240
tcagagcgag	tccggaggca	ggcagtagcc	ttgtttgtgc	agcagatcga	gtattactgt	300
tggttgctta	tcttcagccc	ggtcagggt	gccagtcggt	ctgattgacg	ggcagaccgt	360
cttcttccaa	agaatagata	gctttgagcg	tacttcggac	agacggcgta	catcgaagcg	420
aaacagaaga	ttcgagaata	attcatgctt	ctataacttc	tattattacc	gaaagtggtc	480
ggtctgttgg	ctgtggcaca	acgttttcag	tatgacaaaa	gtgcttattt	tatcgaagat	540
ccgcaaactg	caggctctct	gggctattta	cctgcattga	gtatccgggc	ggagtgtctc	600
tacaagacgg	ttccatttct	tcttgactat	tcggcatgac	gactgaaatc	gtccaaaaag	660
tttcacac						668

(2) INFORMATION FOR SEQ ID NO:1189

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 620 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...620

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1189

```

tgcagctcga ctctanagga tcccctggat gatattgcag ccggtcgcag tacatgaaag      60
tgtacaagca gatgaaaatg tacaacgac ccactcttat ccgattcttt tgggcaagaa      120
gtagaaagcg accgttcccc gcattcacat tccttcctta cggacaactg ccgtttcccc      180
gttttttacc tttctgcgtt ctcccatggc tcgatatctg atagtcgcgt tgtcggcaat      240
aggcgtgtgg caatgacaat accggttttg tatgcggtag ccaaggcata cccaagcata      300
gtttcacact gctgactcag cctttcctga catcgctact aataaccctc cgaacaattt      360
ggaagggatg gggatcgaca tcaagcacga aggtcttctt tggtcggtct tcttacctat      420
atcggacgac tcaaggatga acagttcgac tatgtcatcg acctacacaa tgtaatacgt      480
tccaaaatca tcgcttctat cttcgctttt tcgggagtca aagggttcaa gtctgaagaa      540
ccgcgactac agcttcggca gcttacgggc aagccacca aaaagccacc cgatgccttc      600
cgtaatataga cgatcgctca                                     620

```

(2) INFORMATION FOR SEQ ID NO:1190

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 482 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...482

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1190

```

cgaggtaagt accttccaat tcttggcctt ggccatttcc acgtgttcgt tgtacacacg      60
ttctctctct ctctctcttc atcgtcgttg taaggaaaca cctgccttct ccttcagtga      120
tcgtaggcag gctttcgatc aatgcacat ggcggtatct ttgatccggt tggagtagca      180
attcaacggt gtcagttcgg cgtttttgac agatccagag cagtcagctg gttgttgctg      240
cattgagtgc tatcagattg gcgttggcag atacatctaa ctlogtcagc ttatgccgtt      300
gcagaaaagc cactccaaag ctcggtgttg cggagagatc gattttgtca gctcgttggt      360
gaagaagctt agagtcgtca gcttggtatt ggcgagagat tgagggcggt cagctgattg      420
gtgttgcagt tggagtattt cgctctttgt tggctgcgac attcagagtc ggatcatctta      480
tt

```

(2) INFORMATION FOR SEQ ID NO:1191

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 551 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...551

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1191

tgaagttgca gtcctcggtc atatacctaa tgatataggg gaggggatcg atcggtttgc	60
tccctctcga agagaggttt ctgtcccgtt tcgggtctgct tatgagaatt attcgaagca	120
gtcgttggcg ggtttaaggt gtttcattac ctttgcgctg caatgcaatc ataaagactg	180
ttttctccat gttggaaagc tcattattct ggatttcggg tctcaaacca cacagctcat	240
cgccaacgaa ttcgcgagct gaacacctac tgcgaggttt atccctacaa caaatgccgg	300
aagacctcta aggagtgcga ggcacatcc tgctggggag ccctattccg tgtatgacag	360
caaggcttct gtatcgaaat gagccgaatt acggccaagt tgccctctct tgggtatctg	420
ttacggtgca cagagccttg tcatcaagcc cggtgcaaag tagaagccgt gcgacagtcg	480
cgaatacggg gaacacatct gaccctcggc agcctgatga tgcaactgctg acaggcctga	540
atccggccta c	551

(2) INFORMATION FOR SEQ ID NO:1192

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 360 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...360

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1192

cccggctacg atctgacgca tcatagaacg ggccgaattg cctcccaaag gctgaagctg	60
tcaaaatcca tcgccaatat aaagtaggca tagaatacac ggaggcaacc agattacttt	120
gcagatccgt ctattatat tcgatggatc gaactggttg tattcgaagt tcagttcctg	180
atctcgccaa ataagcgagg agaaaaatag gaggaattgt aaatagggcg acgagaagta	240
acaaaagtgc ggccttgat tgactttcgt ctttcacttc ggtaagggtg atggaaaggt	300
gcagtcgata cgctctgcaa aactgaatgt ggccgtttgt ccacgagtca ggtttgagga	360

(2) INFORMATION FOR SEQ ID NO:1193

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 403 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...403

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1193

tat	ttttttg	ggcgatatta	tcctgaaaga	ctttaatgag	atagacaaaa	cctcgtatcg	60
gcc	aaagcct	tatacagcaa	tctgaaagac	tttcgggaat	ggagaacgat	ttctcatttt	120
tgag	cgaaag	acaggtagca	gccattccag	tttttgggaa	tcctttttctc	cagcaagcgg	180
ccaa	atggag	aatggagtea	gcagagtttt	ctggatttct	ggaagctatt	gtccccgctt	240
taca	tcgggt	caaccaacgt	cttgcagacc	aaggcaacgg	ataccatggg	atgaccttcg	300
ccata	cagtt	gatcgctcc	ggcaaagaga	aacatcggt	cgaagctgct	ctcatctgca	360
gacag	agggg	ggaatgcaca	tcctgataaa	tagtctttgg	cgg		403

(2) INFORMATION FOR SEQ ID NO:1194

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 467 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 - (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 - (A) NAME/KEY: misc_feature
 - (B) LOCATION 1...467

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1194

ccga	aagaatc	gaggggaaag	tgcttctcta	tcaatatctt	ccatccttga	tattgcaaaa	60
ataa	gtctga	aagtcggaat	aaccacaaaa	taaggaggta	cttatccgga	aatcagtaaa	120
aaata	aaaata	atcagagcag	tgtcaaagag	aaaacctccg	acacagccct	gattatatcg	180
tttg	aggcta	tttacctgtg	gaactattcc	gatggtgctt	cttccattgc	cggttcggct	240
gtgg	gacgga	aaggaaactc	ttacgctcgg	ctgtcgcctt	ttcgtaatcg	tcacatgcat	300
aacg	acgagc	ttctcgtaat	cgcgcaaacc	agtaccggcc	ggatggagggt	gaccgcagat	360
aacg	ttttct	tcagtccttc	caggtaggtc	agcttaccac	agatagctgc	ttcattcagc	420

accttggggtt gtctcttggga agaggcccgcc gggacatgaa gctcttg

467

(2) INFORMATION FOR SEQ ID NO:1195

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 630 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...630

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1195

gctgaaggaa caatgcgccc aattatcgaa tgggacacga acaaaccact ggattcattc	60
ccgaacatac gcatacctac aatgtcatcg gtaatgtgac gaacaccaag tggctattgc	120
cgagacgaca tggggcggac gtcccgattg gccgaaagtg atggtatcat ggactatggc	180
agcctgatct atgtggtctc cagcgttcta agacagctcg tgaggctata gacgtcataa	240
ccaattggta aaggaatacg gctaccatag cagtggcgaa agtttttagt ttgcgataag	300
aacgaagttt ggattcttga gatgatcggc aagggttaagg ggccaaagggt gctgtgtggg	360
cagctgtgcg cattccggac aatgctatta gtcacatgcc aatcaagctc gcattccagca	420
gatcgatttc aagagtaaag atatctctat tctcccgatg tcgtttcatt tgcccgtgag	480
atgggattct ccaaggaaca gacaaggatt ttagcttcca agaagcatat aacccttata	540
gaangtggtc ttcgtggttg tgaagcctcg tgtatgggct ttctcaatag ttcaatcgca	600
tatgggtaag tatgaagctt ttatacggaa	630

(2) INFORMATION FOR SEQ ID NO:1196

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 559 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...559

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1196

ggcgtacgat	ctgttagagg	aataacgcgc	agcaagggg	aggaaaggag	gaaggaaaag	60
gagaaaagagg	aatagagaga	aaagcaaaat	gattttttgag	agagagaaaa	taaaaaagga	120
gagagcctcg	gattcgagac	tctctcctac	ctttttttcc	ggggaggagg	gtggagatcc	180
tatccccccc	tctctccacg	cttcttaaaa	aacggcggcg	tcctactctc	ccactgtgac	240
gcagtccatc	ggcaccgttg	ggcttaactt	ctctgttcgg	aatgggaaga	ggttgatccc	300
caacggttata	accacctgaa	tacttcgaaa	aggcaatcga	cattcgaaaag	gccaacaaat	360
aattcctcaa	gctttgcggc	aacaaaccaa	ccataaccgca	tccttcggga	tgcacaaaaa	420
gtttcgggct	attaagtact	gtcggcttaa	ttgttaccac	tcatacacct	gcagcctatc	480
aaggtcatag	ctttaaccac	cctattatgg	aaatcttate	ttgaggccgc	ttcgtgcttg	540
atgctttcag	cacttatcc					559

(2) INFORMATION FOR SEQ ID NO:1197

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 2045 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...2045

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1197

ttcggtatgg	actaccgagc	aactatccgt	accggcataa	agaacgatgc	gatatggcta	60
tattcttgtg	ccgaagaggc	cttttttctg	aaaagaccga	ataccacgaa	gtgcctaagc	120
gacagatgag	gtcgccatcg	cgcaattcgt	tccttcgggg	aaggcaggta	caaaaaacct	180
ttcttttctg	ccctgcagca	tgcaactcaga	cagagcagaa	aagaaaggga	gagaatgcac	240
cgggtacgaa	tgcatthaaga	cgcaaaactg	taaatccgaa	gggatgctta	tttccgatcg	300
cttcatacgac	aagccatttg	ttgtcgatat	tcaccacatg	aacgtggttg	tatcatcttc	360
gaaatccaga	taggtgaccc	aagcttcctt	ctcacatac	tatccttgat	aaaggtaaac	420
ttgtagtttg	gtttggcctc	tcgcccacaa	caccatacag	atcgacaagc	ttattggtgc	480
gttcogtgca	tacttcttag	octcttcata	tttctgtttg	gccatgttct	ccgagaagtc	540
tttacagcat	ctttcggggc	ggacgatgaa	cagccggcca	tcaaggcacg	gcaaacaatg	600
ccgctccgat	tttccatctt	ttcatattag	aatttttctt	tttaagtatc	agttgcttag	660
caaagatagc	gaatatccct	atctcccatt	cgtgcaggtg	acaataatcg	tccgaaaaag	720
gccgaaagga	gagacaggcc	agtaaaatgt	ggagccggaa	tcaggagaaa	catggttcca	780
aaaatctgaa	aaatcgaacc	aaaacaaaaa	cttttacgtt	cgggaatttt	tttttttggc	840
gcgagttcca	aaaaattccc	gaaccatggt	tttagggatg	tgtttgattg	tttttcggcg	900
catgaaaaga	aaaaatggtc	agcttcccc	tcctcttcgc	tctttttcat	ttcccccaag	960
atacaacagg	gggcgcagag	tttcggatcg	gacggattcg	atcggaact	aaatccggcc	1020
gattctgtta	accatatgag	acgaaaacct	gtcgaatggt	gccaatatgc	aatcatgatg	1080
taccttttga	acagaatcat	caacttaaaa	acagtcaatt	atgaagaaaa	aagacttttt	1140
ctactggcga	tcattgcact	atgcagcatt	catgcacaat	ggggcttgac	ctccaaaaac	1200
gagtaaaagg	gaatgagcaa	ttcgctctga	agagcgtttg	gcagagcctt	tcacagcctt	1260
tcggcatcag	gcagattgat	attcagatcg	aatactcccc	atacaggcac	ccctccgaat	1320
agagccgagt	cgaacatcat	accactaatc	aatacaacgg	taaagaaagg	tgctgaaca	1380
tcgaattcga	aaaaaaacgt	tccatatcgc	ctaagtctgc	atgcgagtta	tcgtcagtgt	1440
gccggaaata	caatcagtca	cactgggcgg	agtggcaatt	tgattttcgg	ttccggtttc	1500
aaccagccca	ccctgaaaga	accattaacg	gtagcggcag	tataaacttc	atcgatacaa	1560
aagcggaaaa	ctggacatcg	tagtcaatgg	tagcgggtgac	cttcgcggca	gcattttgct	1620

cataaggata	tacgcatgaa	cctgaaagga	tccggcaata	tcactcttcc	atagacgaaa	1680
ccaagacgat	tcaagctaata	atgaaaggaa	gtggagtatt	aagctgacag	gaaaagcttc	1740
gaacacgata	ctgagaagtt	cgggagcggg	atgttcgact	gccaaagcct	gacgactgac	1800
catgccgaca	taaaatgagc	ggaagcggag	gcggccgcct	cagtgtaacg	aagaaaaatca	1860
gctcaatcta	tcaggatccg	ccggtttcac	ctgccatgga	aaggctaaaa	tggttcttat	1920
aaaataggac	gctcttcttc	attcagtatg	caaccgtaag	ggttcccatc	ttaagccaat	1980
aaatacttnc	ctttttcgtg	aacgaagaaa	gacagaagaa	ccgagaagag	tcgagttgca	2040
gcttt						2045

(2) INFORMATION FOR SEQ ID NO:1198

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 442 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...442

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1198

cggttttctt	ggttgtcata	tcgtcagatg	cgcataaaaa	agtaactcct	caaaggtata	60
ataatccgaa	cagaaaggaa	aaagccaata	gcggtactag	ctcttttata	cttgcccata	120
catttttactc	aatgatgtga	gtattttact	cagtggaaat	acaataaaga	catcggtg	180
ctatcaagca	tttacaatca	agctcttgca	agcaaacaga	agcaatgtga	ttatcccgtg	240
aaggagagat	tggtctccaa	aaaattttcg	attcatcgga	tgtgggcttt	tttgtacatt	300
gcaagccgag	gaaagctcca	cacaaaagat	aaacggctat	atacagagct	attccaccgg	360
cagaacagca	taacgaaacg	actcaatgat	cacaacatgt	actccgactt	cgctcatacg	420
accaacgcac	ccgggcagat	ct				442

(2) INFORMATION FOR SEQ ID NO:1199

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1243 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature

(B) LOCATION 1...1243

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1199

```

ctccccgattc gcccataaagg tgagcctgca caacagttgc cacggtgtgg cgaactgcat      60
ctgtccacccc ccagtgaagt gcaccgaccg taccacaaaa ggtgcgccgg ctattggaga      120
tggtgcaggg catagaggta ttcgagcgaa gcgaatagac gaatgctgcg gtttcggcgg      180
tatgtactcg gtggagagcc ggaggtatcc acctgtatgg ggcatgacaa ggtgctggat      240
cacattccac aggtgcggag tacatcacag ggccggacag ctctgtgcctc atgctatgca      300
gggagtgata gacagagaga aattgcccga tcaagacaat tcagcagtag aaatttttagc      360
agcaaactta ttgagtacga agcatagcga agggctgccc gcttttttga gaataagtcc      420
ggagcccaag tggcatgacg aacgctctgg aatggtgcgc cacaaacgcg acatccagcg      480
tgatacgggtg cccgagtggg gaaagatctg cgccaactgg gctcatgaaa tcaaacgctc      540
aatgtgacac acttggattg agctgctgct gcgatttgaa gaaaatgccg tcgcaacggt      600
gtcatcgtcc attgggctaa ggacgccaaag gagcacacga gatcctgtat ggcattctgc      660
gtgatcatgg cgtcaaaaaa ttctgtgagag caaatccatg cttacggagg agtgccacct      720
gaacgaatat cttatgaaaa gggataaaac gtgatcgaaa cggacctcgg cgagcgtatc      780
cttcagctta tggaagagcc accgagccac atcgtgatgc cggctatcca tataaacgcg      840
aggctgtaag cgatctatcc catgacaagt tgggtacgga gagggcaatt acgaccctac      900
gtatctgaca cgtgcagcac gcaaaagcct ggccgaagact ttatcagcgc ggatgcagca      960
atgacgggcg gcaactttgc gttgcctcta caggcgaagt ggctcgtttgc accaatgagg     1020
gcaatgccgt atgggtatgg cttgtcagaa attgaacatt tgctctttcg ggctggagaa     1080
ttggtacccg acttggatgc ccgtaggggt attcaccoga cttctgggcg ttccgggtaca     1140
ggacagccct ctaccaccta tacggacact accgcagcct catgaagtgg agagctcact     1200
atatcatcgt ggacaacgga aggacacatc atcgaaatga gga                          1243

```

(2) INFORMATION FOR SEQ ID NO:1200

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 526 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...526

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1200

```

ccacatcagt tcgataaacc cgtacatgtc tgtacccgcg tgctatccgc tatcctcggg      60
gacgcgacgc tgcgtgatca tctcaagcgt gtcggctgtg cccacaagggt gtcggggtttg      120
gaaaagtcga tcatataaga tcgttggtgg caaaagcata gtccctcttc tcatcgtaat      180
aaccatactc cccataagag aagaacggtt caccgtatcg gtgaggatca tattgccgaa      240
ggcttgccaa aaccggtagc acggctcgtaa aagatcgagt ccccggtcaa ttgctggccc      300
cgttggagga ataaacgatg gagcgatcca gcaaaatgcc tactcgggtgt tcgaatcgta      360
cactcctcgc gtagaaacga tattagccgg agccgatctc atctccgtag gccccaatat      420
gtgactgata tttgggtatc ttattataat gaaagttctt tcccggtgtc atgggtatagt      480
cccttatttt ccaaattggga catttattct tcggaaagaa tggcat                          526

```

(2) INFORMATION FOR SEQ ID NO:1201

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 566 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...566

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1201

```

acctgctcta taatacggcc tatttctgt ggggagataa gcgatggagc cctcctccga      60
agtaaagagt gccgatcgta tcggtgactt cggcacgaga atactcatct cggcgatcag      120
tgctgtata tactccgaac gaagcgcttg ttctgtcgcg aatagaagtc gcaatacgag      180
cagcgcgtgg cacagaagga atatgaatgt atagtcccg cacttgatct ccattgcttga      240
gggagggata cggggccggc cacattcatt ttgttgatgg cttggagacg tactctatcc      300
cgctgggttc ccactgtag ctccttgggc agcaggtagg agtgtcttcg atgcggtcag      360
ccaccagcct gtcctgcac cggccggagg tgccaatctt ctgaggaaga ggcggtagta      420
tactacagct gtttctccg cgctttgtcc caactcacag cgattttgcc atctgcccg      480
cgtgtcaacc aggaatttct gcttttatgg gagcggcaaa acccttgcca agttggggag      540
ggtaccacgt cttcggcaaa tcgtcg                                566

```

(2) INFORMATION FOR SEQ ID NO:1202

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 507 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...507

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1202

```

cgaagaggaa aaatcgactg tcagcttcgt aagacatgac tcaaagcatt aggagatact      60
ccaaatcagc ttcttcgtga tagggagaga gcgacaaagt actgttcgg tagcgaaggt      120
accaatcgat cgatgcgcca acggcgccaa tgaatccccg tgcgagtgac aatgtcgaat      180
gcttcgtaca gagcatgcct atacgtgcag gtgtcagccg gtcatgcgtc agcgagcata      240
gatagcctgc tcgatcgggt cagcagcacc atacaccga agtcccggga accgtgcac      300

```

tgctgcatac actgtttcac gcgccccgac tgatacgaaa gngngaagtt ggcgaacgga	360
agccagcaaaa gcggttaagcc caagcacatt gacgtgccgg ccataaaccg ctccggcatc	420
tccacccccca ctgtccagtc accgaatgca aaccattgca ccttggtggtc agaagggtga	480
acgctttcgt ggtcacggat atagaat	507

(2) INFORMATION FOR SEQ ID NO:1203

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 545 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...545

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1203

cgtgccacca ccataggcgg tatagctttg ggggagatgg ggcacaggcg tcggacctgc	60
tcatacgaaa tcgtaccaca ggggtgggaac gtatgggggc gaggtggcta tcgctctgat	120
caatccgatg cgctttctca accgtctaca gcaggagagg tgacttctgt cgggagtcgc	180
agcggacaga tatttcgtct gtccccataa acatagtcgt cgatgccggc ttctcgctttt	240
tggcaacaag cggcatgccc gaaccggtgc cacggctctg accctgaatc tgagttcgac	300
tacggcgatc cattccgaag cgagactttc tctccatacg attcttccaa ttcaaagccg	360
gattgagttt ctccgaatcg caacctctgc tggccagatc aatctgatcg gaatcctaag	420
cggatgccaa ctgctcgcac agaacgaacg gttttggtgg gaaggtctct ttcagcactt	480
cgactactac attcggaaaa acgaataagc aaaaattcga gggaggtact cgtcacccaa	540
ccgga	545

(2) INFORMATION FOR SEQ ID NO:1204

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 758 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...758

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1204

```

ctgcgtcctt cggacaagct ctaccggttc gacaaaagag aagaataagt gtagggaccg      60
agagcgaatt atcacctctc aaaccccgaca aaacccaaga tatgaaagag aaagaataacc      120
tggtctccct cgacatgaag gtgagagcta tgaatgcgac ttgcagggtg tggtaaacaa      180
cagcaactat cagcgcataat ggagcacacc cgccatgaat tctgggaaag cctcggagat      240
aatttggaac aatgcacgaa aaaggtcttg atgctttcgt ttacaaagt accaaacgtt      300
caaacagtcc ttgcgtagcg gcgacgctt ccgtagctgt ctgcctgcc caagaaaggc      360
cccaaactca ttttcatgca ggacattatc aggaagacgg tgtgatggca gcccggtggc      420
aagtggaggt agtagccgta cggacggtgt gtcacccgc ggagagtatt tcgatgtgct      480
gatgaaagac ttttgtccaa aaccaccaag taacaaaaaa cgaagtagag aggaagcccc      540
cgatcactat acagacggag gcttctctt cttttttgtc atcaggataa gccttatgct      600
catactcctt tcatgtgcca agacgatcg tattccgagc gtttgccatc acatttgacg      660
accacttcgn cgatcttcga tgagcaacca caaagattgc tttagctgca tcttctgcga      720
tataaaggaa ctatccgact actcngtata aatagaaa      758

```

(2) INFORMATION FOR SEQ ID NO:1205

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 516 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...516

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1205

```

cgcagtttgc tccaccaatc ggcacaaggc ttcgttggtc cgttcttgtg gaaaggctgg      60
aaaaacaagt cgccgcataa atagcccggt atgctcaatc ggggaacgta attatctcta      120
caccctttgg catcggcctc gtgtacctgc ggtcgatccg ctcgatattg tattcgcaat      180
cggccacttt cacaaaggaa cagctgctgc gaccttcata aatccgtatc tcatagggaa      240
ctgtaattat gaggattgtg gtttttattc taattccgta caaatatatg ctttttctca      300
gtccctctcc gaaaaagagc caaagagagg aactgcccga gatacctttg gaaagagggtg      360
cttgaccatc tttggggagg ggagagcaaa ggttgtacat catgatggca tgattctcca      420
caaacggctc ggtatattcg cgccatcggc accagtgcg atacgtacca gcttattgtg      480
tcgcggtata ccacccaac tctgatgctc tatgcg      516

```

(2) INFORMATION FOR SEQ ID NO:1206

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1149 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1149

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1206

atctctccta	actgaccgaa	gcctatagtc	gctgtatcgt	agggtattgt	tacatcctac	60
cctagagggt	gaaggctgtt	tgaatgctct	acatcaagct	ttgctttcta	cgatcagcat	120
caaattgata	cgagcaatat	gattcatata	gcgaccgagg	cattcagtat	gccggtaaga	180
gctacaccga	tctgttcatg	ggcgaggctg	gcgcatcagc	atgactcaga	cgggagatcc	240
tctgctaatt	cattggctga	gcggtatgaac	aatacgctca	agaactcgtg	gcactctcct	300
cttcgaagca	gtcttttgat	caagcactcc	tttctgtaga	acagccgtgc	gcatgtacaa	360
cgaggcgctg	ccacatcaag	ctctaggggc	gaaacgccta	tgcaagtcac	tgcgccagag	420
tctaaaaatc	cgttactaac	gggaggggag	atggggccaga	gattgcccc	gagctatacc	480
gaaggatgaa	gtcagacaaa	gagctaactt	tgctcgtgtc	aaccgaaatt	agacctaagg	540
taagggtgtg	caacctaaag	tagaattata	gaaagaacta	gtaaaccatt	gtagaactat	600
cccgccaaat	gtcaactttt	ttcagtagac	gtcaactccg	gtggattccg	ttgaaactac	660
tagtagattc	ttccaaaacc	actagtgttt	tgcccgaaac	cactagtagt	tttctctgaa	720
accactagt	gttttttacg	cgttaaaaga	gtattgtcgt	gtgccgaaaa	aaagatggta	780
gtcagggcgg	ttaatttcat	cttggttcaa	caccgtttag	gagcacgact	gataggattt	840
acacctgcct	tcgatgaata	tcctgccgat	ttgcttgttt	tcagcatatc	catatacaaa	900
aaggccaccc	tttcctatga	aagagcggcc	ctatctgtcc	ctgtttctaa	cctaacctga	960
aattattcgg	caggatggat	gcttcagaag	ggcatgctgc	agcaccaagt	gccacaatca	1020
atacatgtac	agcattcgat	tttatagatg	ctaccttcag	agatagctga	taccggactt	1080
catcgatgca	tgatcccgca	tgctacacaa	ctggtcatta	ttaacgtagc	catagttttg	1140
aatagttta						1149

(2) INFORMATION FOR SEQ ID NO:1207

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 632 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...632

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1207

cgctctagag	gatccccccg	acttcgagtt	cggccaattt	cttggaagat	tgcccacggc	60
ctgaaccact	aaggtaatgg	taccgcgctt	tatgtcagct	gtgcaatagt	caggggggatg	120
cgttcgcctt	tttctccaac	gcggatgtta	caaaatgtcc	tgctottcgc	gatttggtcta	180
tacgaggagc	ctctactcca	gcttgatcac	attagccgag	aagtattctt	tggtatcgat	240
tttatcatag	taacagtcac	atttgcccgc	tgctaaccga	agcgttcggc	cgcaaggtaa	300

gaataatccg	gggggagtag	acaggacaaa	gaaaaggaca	cttcgttgga	gagctgaggg	360
aagcgtggca	gtcacatggg	aataccatcg	gggaaacgga	taaatatggt	agttttgtct	420
gtaaataagt	aagcataaac	acataatgcy	cattgatata	atcacctgcy	tgcccgaat	480
gacgaaaat	cactcaactg	ctcgatcatc	gggagggcac	aagaaagagg	actgctggat	540
gaaactgcac	ccagcttcgc	gactattcca	ccgattaatg	aaacgtgtga	ccactatcat	600
tcggtggaga	gcccgcacgg	tgatgcaaat	ag			632

(2) INFORMATION FOR SEQ ID NO:1208

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 478 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...478

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1208

tgagccggag	gacatctcaa	ctgcctgtcc	gaattggtgg	aagcgaccgc	ggacgaatcg	60
acatggatcg	gcttcccgtc	ggagacccta	ccctctctcc	aaagagataa	tcggcaacga	120
gagtcaggaa	cgtatgggga	tgctgatcag	gagaaagatt	tggaatatgt	acgcaaaata	180
gccgaacgcg	aacgcgtccc	atgtatgtgg	tcggagagac	cactgacgat	atgcgcttcg	240
tcttcgcaag	gacaatggcg	agtgtcctat	cgacatgaag	ctggacgaca	tgttggcaag	300
cctccccgta	ccatcatgga	ggacagaacc	atagaacatc	gcttcaggca	ccgcaatacg	360
accctgcccc	tctggatgaa	tatctggagc	agtatttgcg	tatggagtca	gtagcttgta	420
aaggattggc	ttaccaataa	gtggacagat	ctgtgacagg	accaagtggc	tcgccagc	478

(2) INFORMATION FOR SEQ ID NO:1209

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 933 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...933

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1209

```

cagagaaagt cggtttcaga cgatttacac cggcagatcg ttcgtotata gaatttgagc      60
caatttccttg tgatgcttat cagtagtcag ccacgaaaga aaggggtatc atagcagtcg      120
cccgtgcaaa gatcgcatTT gcagtaaggc tcaaatagat catcccgtcg catatggcta      180
tcaggcgaac gacgggagca gacctgcagt aggatcggcc aaggcttcog tctcggatcg      240
tgctaacgtc cgatggatto accctgtgca tccgtgatcg gtatccactc ctogggtgca      300
tttctctacg taccatttcg agtcgaatca cctcatatat ataagcaata acagcgatac      360
accgggcaga tacaataaga ggtgtgcaat cccccaccc tgaagtagag caaaagtccc      420
agaaggaaaa tgaaaaataa catatacgca ggatgctgcc tgtaatgctg ccatactcca      480
gcatgaccag cgtttgtgog gacaatccgc atagtctccc tctctgccac tgcttctgog      540
aacagcctgc acgcagccac agccaagagc atagcagcca gactccagca aggtcgggtga      600
gcggggaagt cttggatagc cacaagtag gtagcaaaaga acaagtacac ccagcgaagt      660
caatacggac ggctgacagt tcttgctttt cgacgaaaaa agagcatccc tccgatgatt      720
gcaaagagag caatgcagcc gtccatgcca ccattatccc cgcactcggc agcaacagga      780
gcaaaagacg accggcagaa atccacccat cggattagac ccataaaggg tgcataatccg      840
gatactcttt ggtagtcaaa ataggattcg ttttcgtatc agataacagc catagaccgt      900
tgggttgta tggcagtag acactgtatt aga                                     933

```

(2) INFORMATION FOR SEQ ID NO:1210

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 392 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...392

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1210

```

cccagttcct cgggggaaaa tttgatcccc ccgctattga ttacgtaatc aaacgcccct      60
tccacacgaa atgcctttca tctacgagct ccaccatacc cgggtgcaaa actccgatto      120
ccgaatatgg ggagcatgta tgcaaagcat ccggattcgt cccggcggaa acgcactcct      180
tccaaagcct cgaaacagcg gaagctccct ctccgttcaa tcgcataaga gccgtatggg      240
atgcctttcc gtcattccgt aagtagcgaa aaaacgggtg ggaatatccg ccaacgctot      300
ctcgtagtcc gtgccagggg gcctcctcct atcaaaagat tttcaccttt tcgaaccggt      360
ggctttcccc cgatgacagg atgtcctcca ct                                     392

```

(2) INFORMATION FOR SEQ ID NO:1211

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 653 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...653

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1211

```

ccccgggagtg gaaaaagccg gcagcatata ctgcagagct tcccctcctt acaaaataga      60
ccgaaaaccc tctcggaactt tcgggtcttgt tcgggtgcct tcctcttgga cttgaaccaa      120
ggaccctctg attaacagtc agatgcttaa ccaactgagc taaggaagaa tagaaaaacg      180
gcttgtgaca gcgcttctct tgggctcgaa ccaaggaccc tctgattaac agtcagatgc      240
tctaacgact gagctaagaa agcctttcgt ttttcgtgat gcaaaggtag tgcatatccc      300
aaacatgcaa gaggttccgc aaaaaaata cattcagata ttaaaccttc tcgccaccac      360
atccgttggg gcatctcatc catattcatg acgagaaagg gctgccgcct ccagacgggt      420
taggctcgtg aattttccat tcgatgctcc gaaaaacgtg gcgcgagaat ttttcgtat      480
tggtccaca gtttttattt cccgagccaa aacgaaaaat ttacgcgcgt gtttttcaga      540
tttacgaacc atgacgtgta ctgaaaaagt gacagtttgg gtgggatatt ctacaaattg      600
gttactaggt cttctataat tctactttag gttgacaccc tacccttagg tct          653

```

(2) INFORMATION FOR SEQ ID NO:1212

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 484 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...484

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1212

```

ccggctttaa gaatataaat cgagtagaat acaagcctat caatctgtcg tgcttcaaac      60
tttgtctgag gctaactctc tgaccaagat ttccgtaggg acttgattgc tgcagggcct      120
gtttctcgaa actctttagt taagatatgg ctaatggtac agtgactacg gctttgacag      180
tagaagctca tgcttttcaa agacagcaga agaagctatt gtaagagcag gaggatctgt      240
tgtaaactat aagcttaatg cgtgcggtag aaacaatcaa gaatatatgg aagatgagga      300
ttttgcgtca acgcattctc acgaccatta ttgttccgctc cgtgtttatc gctttgggtt      360
catttgggtcc gtgatccccg gtattgacct cgatcgttgt cagcaactcaa agaccagact      420
gctggaggac tgatggctct ctggatatgt tttccggggg ggctttctcc catgcatcta      480
tttt

```

(2) INFORMATION FOR SEQ ID NO:1213

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 524 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...524

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1213

```

catccatcgg caagtagcat cgcttttgcc gcatcgctcct tttgaaatag aatacgccgg      60
attgctatgt ggcttacggc tatgcagget ctcagtaccc tttctgacat aaaaaagtgt      120
gccgaaaacg ctgctgaagc gattttcaca caccctcatt ccttatgctt atatgaaaag      180
ccgcactgcg gatagctaaa ctccgaaaaga caagatttga ggattccacc acctttgtaa      240
tccgcgtgca aagcaaccgg aaagggtcgg cccgccatca gcgatgaaat tgtctcggaa      300
tagttgttat gatgagtttc cccgatctaa cagtgcggct tatectcgtc ttctctgtat      360
tgcaaagtta gcaacattgt ttagatttgc aatctttgtt tcatcgattt tgggtatggt      420
tacactttcg gatcctaata gcgttctcga cgtatcaaac gtattacgat agttcgggtg      480
cttaggtaat tgctttgacg atcggggaag ttttctccgg ttg                          524

```

(2) INFORMATION FOR SEQ ID NO:1214

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 485 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...485

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1214

```

cggctggata tgctccgaac gtccgttgcc tcgggagacg gtactgacct gcggttccaa      60
ttggagtatt ggggcgatat atatcggttg atgaagcagt tttccctcaa gcctcggacg      120
aatggctggt cggttttacc tcggatcatt gctttggatg aagcaaaaca ggaaaatcct      180
attggacaat gctcttaacg cggcgagatg gagtcttctc agccgactgt cacggatcgg      240
tacttaagga gttgcctccc gatcagctgt tacctcccga agctcctcgc ctgacgggtca      300
ttggcttgga accaacctgt aagctcaggt agtattaggg caacgcataca atatgatttg      360
tttagagcga ggagcttctg tttcgtcctc tgctgaactc ctaatgggtg tcctgggtgca      420

```

cattggtatt tatggcacac cgctatcttt gcaaccgat cttattcaat cctgacctcc
aatat

480

485

(2) INFORMATION FOR SEQ ID NO:1215

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1028 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1028

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1215

cncttgccca	ttcttttggt	ttgctaactg	tcagtaacct	tttcctgcaa	tctgctggta	60
tgggggtcaac	taccttccat	cgctaaaga	ctccagcatc	atacctacac	acgttgaatt	120
gcttgccctgc	atagattgta	aaagatctgg	tattgcattt	gcatacgccg	atatagcaga	180
acctcggcag	aatctcagcc	atagatacaa	ttccgggtcta	tcttctattc	aagaggacgg	240
aaaaaagctt	ttctcggaga	aatctccctt	gcttttttgg	cttataaaatt	gttttttgaa	300
gtcctaaaat	gagacctctt	tccaattcga	gaactctctt	ttgggattcg	tcacactact	360
tagtaatatc	cttttcaaca	atgaaaaaaa	cgctgtaata	gtcgttcacc	cggatttgac	420
caaataccgtt	atcaacaagg	ctggggccaaa	gccatcgaag	gtgcagccac	tatccaccat	480
ctctacgaac	gtatccgaac	ggacaaatcg	atctagcaca	tgaacaagcc	ctgctggagc	540
tcattgaccgc	atcgtcttcc	aattccccct	ctattgggtat	gcagctccta	tctgctgaag	600
aagtggatgg	acgaggtctt	tactgagggc	tgggccttgg	tggcgggtgga	gacaagatgg	660
agggtaaaga	aatctgtgca	gcagtccttg	cggatcacco	aaatcagctt	ttgccgaagg	720
agcacagcaa	tgccaacgct	gcgaagctac	ttgaatgtat	tcgacgggat	agctgctttc	780
ctgcccgtcg	attcaccggc	taccatgcct	gctacgattc	ctacaatcct	cgctgccgga	840
aatgctgccg	gccaactgcg	aagcctatct	cgcctttatc	aaggagaatg	aatacagagg	900
taatagccat	cattccggct	cgatttgctt	cagcccgatt	cccgggcaag	ccactggccc	960
gatatgcttg	gcaaggtcta	gatccaacgg	gtacatgagc	caatagtcgg	tgtcgtcccc	1020
cgggccccg						1028

(2) INFORMATION FOR SEQ ID NO:1216

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 523 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...523

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1216

```

ggagcctaaa ccctcgcaga gggagggagt cngatgtgt agtttccga cttccgagta      60
caggttcagg ctctgtattg agcaggctct catatcggag gcctcgtgtc aggtattggt      120
tgtccgcgcg ttgcggagca tcaggctctg gctcggagca atcggcagaa cctgtcccga      180
ccgatcgaga actacttccg aagtactgct tacagaaaat gtaaagcccg aatgctgtcc      240
gatcttactt tgtgggtaat aattggatta tatccggctg gaatttctgt actttgatta      300
gaaataggca tcccattttt ctttcaaaaa agaacacaaa tacttgtatt atgatgaagc      360
catctctttt tttagacctt gttgctgtgt ttttatggtg acaataaaag gattagcaaa      420
accacaaata gacaaagagg tgatcccata acgaagctga ctttacgaaa tccccagaat      480
ggaggcagcg ggttttatgg acaaatatcc catgctctgc tga                          523

```

(2) INFORMATION FOR SEQ ID NO:1217

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 448 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...448

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1217

```

tttgatgtcg agcatacgct ccaacttact tttgtcgagg ctgtcaaaat ttcatttggt      60
tttatgacct gcatgttttt tgagcaatta gtgatgaaaa caacctcctc gcagcttato      120
aaaagcttat tgtggaggta tatccacttc gtaaataata caatctcaga atatataatt      180
gttctggttt ttcacacagga aaaaagtgcg tatgctcatt acgcctcaag caggatacga      240
gcctgaatgc tccgattgtg gtctgtgttt tgtgaaaagc aggcgcgaga ttttttcggt      300
ttggtttcac tttttttctt ttcccacgcc aaaagcaaaa agtcacgtgc cacacttttg      360
gggtgtcata aacccgaaaa ttaggcgtgt gacccaatcg gataggggat gatacatcct      420
atggctgaat cgggaagtga aatggtgc

```

(2) INFORMATION FOR SEQ ID NO:1218

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 976 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...976

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1218

```

cggaatatca gcgtattcgc ttatctcacg acactggatg ggatgctcgt taggcattta      60
ttgggaacgat gggttggtact atgtctattg tagtggcttc tactcaatcg ctttagagta      120
gaagagatgc aggatcatac ttaccgctca cacgaataca gtactgcacg cagcacgagg      180
agggcaaggc ctataagctc tcatcaaggc tctatctctt gacggcttag atatgtcggc      240
ttatttcagt ataaggacta gcttcataaa aacgattgca cctaacagca ttcttaagat      300
gctgttaggc gacttcttat tactgctgga gttgttgagt gaggcttctt gctcttgga      360
gaggagtgtg tgctggagct ggagttcggc ttgcgttcga tggctagttc gtagttcgtg      420
acacgagagc ggagcttgcg atggagtcgg aggagtcctc ggaggagaaa aggctgtcaa      480
ggctggcgat tttggctgtg tatagccgag ctccattcgt agaatacgat agcggagaga      540
tgactatcaa gggcttgatt gacgccatag agatgtgtcg cccaaccatg acgcaggcaa      600
ggacagcgat catcacaccc catatgagcc attctgccag cgtttgacat cgaaaaggta      660
gtatttggaag agctttatct cgggggttgg ttgtttagtt tggagttctg tcaagagttt      720
gtcggtcgct tcgtctgact taccgtacc tcggtaatgc ctgacttcat ttcgtagatg      780
cgcttccaag tttagcaatt acttgacaaa gtctctctct gaatcgacga tgaactcctg      840
ttgctcctct aaaatcttgg cgattcctgc gagatttttt ccattctcga cttctccttg      900
cgactctgtt ggttggtgta aattggagat atcgctttga gttctctgtt ctggttgctt      960
atttcttcga gtactt

```

(2) INFORMATION FOR SEQ ID NO:1219

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 445 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...445

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1219

```

cgtgtagctt tcgtgctgtt cggttctttt tatactact atctgatctt actctcctgc      60
cggtagccgg gccacaattc tatttccccg ccatcggtgg gatagcgtag cggcaggggcg      120
atttccaccc atcggtcagt actttgcgca caccggagc tacaagagat ggaggtggcg      180
catcaggggac tggtcttcgt ctgggtcaata tgtcacaaca aatgggagaa gcgtcccact      240
gcggctttcc caagtagtca tgcggcatt caacggtna tcttcgcttt ctttaccga      300
agtagccggg aagttatttc tggtaacctc tgccaatcgg tattgcctga cactggggcg      360
ctgtctatat acaagcacat tatttcattc gagtattggc cggtcctggt ttcgggactc      420

```

ttattctatt atggaggac aactg

(2) INFORMATION FOR SEQ ID NO:1220

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1068 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...1068

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1220

cgccggcgag	ggagaaatag	acgaccatgc	catcatcagc	ggcggagtgt	gatacaccag	60
ttcgtagca	tctctcagca	tgtgatgac	caaggtgggc	ccgcctctcg	aaggacatcc	120
ctccgtatgt	actggtggga	cgggatctct	cgtttattgc	ggaatcaaca	tcgtagggtc	180
gcgccgncga	aatttcccaa	cgagcagatt	ttcctgatca	atgatattta	ccgcacactt	240
taccaagagg	actgaataat	tccgatgcga	tcgatattat	ccagcaggag	tacgcgattg	300
tcatgagaag	gaacttatat	tagactttat	caagtettcc	aaagcggcat	tgtccgtgga	360
accatggagt	gaagccatga	tcgggatatt	catggagcac	gcataagga	gcttgaccgc	420
tacacgatag	agcacgagcc	ttctcttcga	tcgatttagt	cgaacgagca	gccgccacat	480
gggtgtatga	ttcgaacgtc	tctacacca	gcagcgccgg	atcgtagtct	tcgccggcct	540
ggcaataatg	gagcggatgc	cctgtgtaca	gcccgatttc	tgggcgaaac	ggctattcgg	600
tggatgcctt	tctcttcaat	gtcagcggat	cgctcagccc	gaatgcaacg	aatgcagggg	660
acgcctgttg	gagacttcgg	ggatcagctg	accgaggtgg	tggacaactt	cattccgccg	720
gaactttcca	gccagccata	gtggtggaag	gtcttttcgg	cgtgggactg	aatcgtcctc	780
tacaggcgga	tttgccaagg	tcgtggagtt	cctcaaccaa	tccggagcag	agacgtatca	840
atagacatcc	cttcggggct	gttcgaagag	gataacttcg	gcataatccg	aatgccatca	900
tcagagccac	acacaccctt	acgttcgaat	acccaaacta	tccttcctct	tctccgaaaa	960
cgccgactat	gtaggcaagt	gaaagtcctg	aatatcggtc	tgagcgctcg	aggaaagcaa	1020
acgatcaagc	agagtatttc	ctcaataaccg	atttcgatat	atccggca		1068

(2) INFORMATION FOR SEQ ID NO:1221

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 814 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...814

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1221

```

cggggccacat aatgcctcga tataaccgac ggctcgggat ggctgcaaga ataaataaac      60
gaccaagctc caaacaatcg gggcaatcag aatatccgaa atcgaacctc catattccaa      120
gagaccaata ctggcgata ggattcatga caataagctg taaaaggcc aggaaaaaca      180
gcagatagct gcggttagca ggcggtggac ataggtgtta gaggcattct gccgaagact      240
gcaatcgagt tgcgtaattt tgaaaaaagg tcgatcatag ttttttttg tatttctaag      300
actttgattt ataagtaaca ttcgtagacg aggaggctaa ttgattgaga ttgtataccg      360
tttagaggat catagtagaa gtatgtaatg tcaaagggtg cggaatgtgt tctttgaaga      420
tgttcaactg aaacgcgaca agatatgtaa aaatattgct gcatagatga aattaaccaa      480
tagacctcag ggacaaccgc ctcaaaatgc tcccgtttaa gtttgattgt agtgatgtgt      540
tttgatatgc gaggggaata gtcttttgag agagagcaaa tacttgttat tcgttcgatc      600
tcattgaaat gtcgttcttg tcatcactca ttgtcgtcag tcttcgtgac tatacagtgt      660
aggaagtttg gtaagggttg cccgagggag gtgtgtcggg tttcagcgga ggacttcggg      720
aatggcccg agcaaggcgc agagtaaaag ctgacgtgtg gttcctttct gcccgatgac      780
caacatgtgc gtcggggccg aagaatacgt ccgc                                     814

```

(2) INFORMATION FOR SEQ ID NO:1222

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 468 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...468

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1222

```

cgtagcaaaa atcccagccg tataggcccg gttgctgcgc ttttattgta tcgctattgg      60
tatcgaacag cctgttcgaa aagacgaagc tcagaactat ttctcagttt ttgccttaaa      120
tttgttccgt tattacactt gctattgaaa gtgcgagctg ttgatagcca atttcttttg      180
cttaaatcat tgaatcgatc aaaaaataga ctaaagtttg tctgtgaaag cccatttgca      240
aatgagagta aatggatatt tatacaatgg tttaaatata ataataaag aatgaagacg      300
aatctacaaa taaatttggc tccttgaatt taagcgggtt ttgcctttcc gttatatgtt      360
cttggtgcat tggatcgttg atacgactat taagttgccc gaagaaactt cccgacttct      420
gaattatatt ggatcttgct attggatatt cttttttgtt gagtttgt                                     468

```

(2) INFORMATION FOR SEQ ID NO:1223

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1092 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double

- (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...1092

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1223

```

ccgagagcaa cctcttcgat aagcattcgg gaggtcaaag aaacacctgt ccgttttaagc   60
tgctgtacga tctgctgcat ccgtacgggt tcaacaggat cagatacggg aggtggccac   120
gtctttggac aatcctcccg gagcttcttt ttctcttctt cgcacgtctt cttacgtgag   180
agggatcggc ttacagactt cccttatcgc caaagatgga ggtgccggaa ctgttcggcc   240
ttaaatcgga gattctttcc tcgatctgcc ggatggaaag caactgagtt ggcacgcggg   300
actcctgccg atttggaactt ggagggctctg cggcttcoga atacaagcta ttgttgccct   360
tggcatttgt agaattctta caggaggagc ttgggttcgc cgtccgcaac gagggggatc   420
atattcatcc ttacgggatg aaggctgcaa gacgggtgaag ccgtttcttt atcgatcgtc   480
acgtgccacg agccggaggg aagaggcttg gctcctttgc caaggaacag aagtggatatg   540
atcatgggct atgcggctga tcggcgattc gccatcgatg agctgtcgat acggaagaat   600
atctgctctt ctctttcggg ctatagagct tgctcgaggc tttttctctt gcccgggagc   660
ctttctcctt cgcattccatc aggataaata agcacggtaa aggcggagta gggatatagga   720
atactgtcca ttgagcgttc atacaaggat ttgagttcga atatgcgagc gggattgggtg   780
aaatgggggtg taattcgga aacgatacctg catctatata ggcacgggga gccatcgctc   840
tttctctatc aaaagggcaa ggtgcccttc gatgggtactc ggctgagttt ccgctcggta   900
gcgacctctt ctatgctcat acctgccagt acaattcgag cgttgtctcg tgggtagtct   960
ttttcttttc cttggctttt tctctttact ctttcgattg ccggcggctg ttggcagggc  1020
ttcgtccttg gtgaaatgct gcgtacccat tcggccatca gctcttccgt ccgaagttct  1080
gtctgctgag gc                                1092

```

(2) INFORMATION FOR SEQ ID NO:1224

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 546 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...546
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1224

cagaagagtt cccataccat gagtagtatc ctctaattaa acgcccacac actctttttc


```

ccgatggaaa attcgggtgct actacctgtc aaatatagca caaaattatc gaaatgacct 120
gtactgaaaa aaatcgtatg ttgttttttag tagataggat tgctgtgctt gtctacttgg 180
gaactcctgc cgagagttct taatcaagg ggcaggctac aagcgaacaa cttgggcaag 240
caggctatat tattggccca aggagactct tgataacaca acgaaggaga gacacggaag 300
ttcctctcct ttctattgcc aaaaactgac ttttaggaca ctatgatgca gatccgatat 360
ttatgttttc ggaagggtatc tggtagtag tttatcggat atcnggggct ctctctctct 420
ctcttcttct ttttgtaccc aatcaacttt ttctgtgcga gtttttacac atctgcggct 480
cgtgtttttc gaagagggtg cgcgagattt ttttcgttct ggcgcgtaaa aatttttactc 540
tcgcgc 546

```

(2) INFORMATION FOR SEQ ID NO:1225

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 563 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...563

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1225

```

cttgaatccg ccgaagtga cctcgggagc atcgccgcaa taatagaacc accggctttg 60
ccccaatgaa tgacaccgtc cggcagattg gctacatcaa atcgttgtag gccgatcggc 120
tgagatagag ggtgcgatcg ggcttgtggc cttgcgaccg ttgggcttca tcttcagatc 180
gaacaggctc agtgcccgga gtctatggag aaaatctgca tggagagagg cctgccacgg 240
tattcgaaga gttgttgttg cctccgttca gcgagtagacc acgcgtgagg cctaaccgt 300
tatgccgggg attttggcta tttcggttct catcgtagtg acgtctgcgg atccagtccg 360
aaaacgtcta tgatcagttt gttcctgtaa atgtagccca tgtcggagtt ggatcatatg 420
gtccgatctg cacgggcatt acatggtaca gctcagcagg gatcatcgta atggcatact 480
gggnaaatga cataatctgc gagagcttgc ttttgaccac acggcgaaac ttgccgttgc 540
accttggtac ggacgaaccg cga 563

```

(2) INFORMATION FOR SEQ ID NO:1226

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 432 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...432

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1226

```

gcgtctggtc atgatccatt cacgtccgtc caattcaacg atgttatccc ggttaaattg      60
gacacatcaa tatacgccag gccactgaaa caggagaaat gaaaatatcg cgaaccaa      120
ccaatctggg tatggatatt tcttttcaat gattcgctga atttcttcat cggttagaaa      180
ccctctgctg gaatctgctg atgaaaccgc ttgttcacaa aggggtcatg agacagaaat      240
ccatgctgcg ccataaaga gtaatggtt tgaaaagctt caagattttg gttgcgtatt      300
cggacaacaa tgagctacag tcagcagata tatctcaaag ttagaatgac caacggggta      360
agctctgaga atttgagatc cgttctgttg tattcgcttt gaggaatcgg gtaaaatgcc      420
gttgctggtt tc                                     432

```

(2) INFORMATION FOR SEQ ID NO:1227

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 478 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...478

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1227

```

ggaaagatcc ccgaagagaa tcgttcgtcc acgacagcga tgtcacgcgc agtcgattgc      60
tgtccaaagc catcatttcc tcattggcat ttcctaccag cggatactgc cggccggcca      120
tgccggaccg taagcgtccg gattcgaatg ggagagggcc ggttggtttc tccggggact      180
atgatatact tgggtgtgagc atattgacta cttcgcgatt gcctttgctc agttggtggt      240
cgatcaatcc tgataacgct ggagtttggc agcgtggtat ccaccgatgc tccgtgccag      300
cggctcgtgg tggcatcatt ataagtgtcc acggtgagat tcaaacgcgg taccgagcg      360
acttgctgc aaggatttgc ttgtctgctt cttcagaggt gcagcacgtt ggctgacgag      420
ttccgggata tatgaaatgc tatcgttcag atagcggttt gtccaccgtc catagatc      478

```

(2) INFORMATION FOR SEQ ID NO:1228

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 594 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...594

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1228

atcctaacta	tctgcgcgat	gccgtattcg	atcctcggaa	aatctcattt	tcaccgattc	60
ggatctgaac	agttttttca	gagccagcga	tgtggtgggc	ttgtcactcc	ttgccttttc	120
atcaaatacct	atctgaaacg	cgttcgccgt	ccagcatgcg	cgacaagctg	attatcaatg	180
ctatcaagg	gatcgccgg	atgagaatgt	cttggtatcg	gaatatctgc	acgatttctg	240
cgatgcccc	acgaactgat	aggtgtagtc	tccggtcctt	gccatgcaga	ggagtggcca	300
gagagcgcag	atcatatctg	acggtgggct	gcttcgatat	caaaaggcaa	aagccatggc	360
aaacgtacta	cgcaacgatt	atgtgaagct	gtcgaccagt	caggaccgta	gtaggcatcg	420
aatatgcctc	gggtctgaag	atgtttatgc	cattgctgcc	ggaatatgca	acggtcttgc	480
agtatggcga	aactttcaag	tctgtcttga	tgtcgaatgc	cattgctgaa	atgaatagtt	540
cgtaataacc	cgtcacctct	tggaagaga	gatcacggat	tccgtatatg	ggcg	594

(2) INFORMATION FOR SEQ ID NO:1229

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 752 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...752

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1229

cgtaaaattt	tgtcttcagg	gccttccacg	acaggagggt	taagaaaaag	ataactaccc	60
tatcgaactc	cggagtgcga	acgactattg	tagatggact	ctttctcgca	agtgtctggc	120
atctcctgtc	gttaccgatg	ctatgattta	gctaccggag	ctgctttgtc	catcaatata	180
cctcagtttg	tccgtaaacg	gctgctgtgt	atcaattgat	ctctttaccc	acagtggaa	240
ccgaatggca	gagaaattag	atcccatcga	acaaggcata	tgggggtag	acgatcgggt	300
aacgttcacg	acttagggat	tcgttcggca	ctgctgttga	atgatctaac	agaaatgacc	360
taactcgctt	cggcaacaga	atztatgtgt	ccgggccggt	agtgataact	tattggaaca	420
gcttcgcctc	tctgatgata	aatctgtctc	atcatcagag	atcttacacg	tatgtttgct	480
ttgccggaag	agtagatcgt	tttctacaga	gcaaacatga	gatcaaactc	ctgtatggag	540
taagctattg	gcccgtgaca	atcaatccgg	tagcaccag	cgggtacaac	tgaaatccga	600
agtgtctgcg	agagagatgg	aaaaagccct	cggtattcgg	tctacgatgt	aagagggtta	660
aacacgcttg	aatgttgatg	aaactacggg	aacagataaa	tagcattagt	ggcttttccc	720
tatgtaataa	aatgattggg	ccatccattc	at			752

(2) INFORMATION FOR SEQ ID NO:1230

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 862 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...862
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1230

```

cgagccggac gtatcacacg gcatgattcc catagtccag catccctgcg gaatatgatg      60
tgtgactacg cttccggctc caatgacggc tccccctccc gatgtttaca cccggcaggc      120
tgtaggtttg aaccagcctc gtattatacg tcagttcgac gtaagaaaac gccaatgaat      180
aattcttttc ctgatcgagg ctaatgccct aaaattctca gacaaatagg ggtaccctgc      240
ttctgttgga tcgaaccaac attgaaattc ggattgcttt tttgaccgaa tgttcagtcc      300
gtacagaaaag atgggctata ccacaaggca catggaggta cacgtagagg ataacgagct      360
atcccgtaca gctcttcgag ctacgctgta gactcggcga ggtacgctct acagcgtagc      420
gagccgagcc gtagagttcc gtccgggagc cgtagagggt gccgagctga gccgtagagc      480
gcagctcggg cgctctacgg cgtagcccgga gtcgctgtag ggcgtanctc gacccccttc      540
ggcgtatggt ccgaatgggt ataaaacaat gcggattcga tctgaagaaa tatgcaatat      600
cctgtttgtc agcgtatttc atttctcggg tgagagattc agcttcgaga ggcttcgaca      660
tccaatgaga cgtcaaaact tttcccttca tttctgatt cggnatatag caatgccccca      720
acaagagctt gatcgtaagg cggttctcat gagaatcgac accatatcgc ttacatcgac      780
cctccgttaa aaaagaaaac ctgcttgagg aaggattnca aacagggtgat aagagggtac      840
cgatatgcat ccgaataacc cg                                     862

```

(2) INFORMATION FOR SEQ ID NO:1231

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 361 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...361
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1231

```

ccccgcttc atcacaaaag acaagcaacg catggccatg aattggctct caatcaggct      60
cgcacatacc gccagtggct ggccgaaccg gctttcctaa caaggtagag cagaactctg      120
ggatgaccga cctcttgggc aaggccaggt ggcggtcttc ttcaaccccg gtagcatagg      180
acgcatatac gaagcaagca gtccggacaa ccgggtgtgt acaagctcac ggattacgcc      240
aacgactgat cgatgccatc ttcaacgtga agggcaatct gaccgatgcc gatcttctat      300
tcagaacctg gccatcgacc tcatgtcggc catagtggtc ttctccacgg gaaggcaaga      360
a                                                                 361

```

(2) INFORMATION FOR SEQ ID NO:1232

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 419 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...419

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1232

```

ccctcgctcg gtatgattgt ccggttcttt gctccgtccg attacagacg gtggaagaaa      60
aaagattccg cgagctgacg gacagtcctc ttgcacacgac agccttcggc cggagcgaac      120
ttccgcaaaa gcattacgcc aaaaattcct taatacgatc gaatatgaac aatgaaaaac      180
atccgaaaca tccgcacccg tttttccgga gaccccgga aaggagcgg acaaagaaga      240
gaaagaaaaa gagaacagtc cgaaaagaag aaagaacagc ttaaaaaact gctttcttcg      300
ccggattagg catcctcttc ctgatttcct tatggctgat ctttctcctt cggccgaaga      360
gcgacaaaag gaagagagga cagcaggttc ttacgaaacc gttccgcaag ccaccgacg      419

```

(2) INFORMATION FOR SEQ ID NO:1233

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 738 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...738

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1233

cgtctaagaa	gtaaccagat	cagtaaacta	gagggcctgg	atagtctcac	tcgctaacaa	60
aactttctct	ctccgataac	caaatacagta	agctagaggt	ctggaacgtc	tcacctcggt	120
agcggagcgt	tatcttttgg	ataaccaatc	agtaaactag	aggggtctgga	acgtctcacg	180
tccttagcaa	cgttgacta	tcgggtaacc	aaatccgtaa	gctggagggt	ctggaacgtc	240
tcacgcctta	gcaacgcttg	aactatcggg	taaccaaata	cgtaaagctag	agggctggaa	300
cgtctcactt	cgtaaacaaa	nngcttcgtc	taagaagtaa	ccaatacagta	agctagaggg	360
tctggaacgt	ctcacgtcct	tagcaacgct	tgactatcgg	gtaaccaaata	ccgtaagctg	420
gaggggtctg	aacgtctcac	gccttagcaa	cgttggaact	gtcgggtaac	caaatacagta	480
agctagaggg	ctggaacgtc	tctcttcgtt	aacaaagctt	cgtctaagaa	gtaaccagac	540
agtaaactag	agggcctgga	acgtctcacc	tcgctaacaa	aactttcttc	tccgataacc	600
aatcagtaa	gctagagggt	ctggaacgtc	tcacctctta	gcggagcttt	atcttttgga	660
taaccaaata	cgtaagcctg	gagggctgga	acggtcttac	ctngtaacaa	agctttcgtc	720
taagaagtac	ccaaacag					738

(2) INFORMATION FOR SEQ ID NO:1234

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 872 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...872

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1234

ggactgatgt	ggtcgatgaa	gagcttcccg	tcgatatggt	cgtattcgtc	tgtaccactc	60
ttgccgcaaa	gccctggagc	acctcttcgt	gcggctgaag	tcctcgcca	catagcgaat	120
acggatggag	gtggggcggt	ccacctttcg	tgtatggccg	gaaggctgag	gcaaccttcg	180
tattcgggtg	agagatttcg	cctcgctctt	cgatatgggc	gttgatcatc	acgcgcttga	240
atccgcacat	tcgggataat	cctcttttcag	cggatcggca	tcgatcacga	gtacctgatg	300
ggtaagccta	tttgaggagc	tgccaggcca	atgccgctcg	agtgtacatg	ctctcogtca	360
tgttggttat	cagctctttc	agtttgggat	agccggaggt	atatcttctg	ctacttttct	420
cagcaccgga	tgcccgata	gtagatagga	aggagcattg	ttctatcgaa	tagtatattgt	480
gttcttgtga	tgtcttttct	cttgtctttt	gggtggaaaa	tgccgtcccc	gtctcgaaga	540
gggggaataa	gccgtctcgc	tcactctgctg	ggattgtcca	gatacgacgt	aggatgatga	600
ccgcactgac	ctcatccacc	agagccttgt	ctcgccgttc	atcttgcccta	tcccggtctc	660
cagaatagtc	ctctgtgccca	tgccggggtg	aagcgttcgt	ccacgtacgt	tatagggtata	720
gaggggaagg	cttggcgaagt	ttaacggcga	aggggaggat	ataggctatc	gattcggact	780
cttctagttc	atnccgctg	gcagtcgccg	cacgaacgct	caccggctcc	cggtgacgta	840
gtcccgccag	aagtccacag	cgtatgggta	gg			872

(2) INFORMATION FOR SEQ ID NO:1235

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 496 base pairs
- (B) TYPE: nucleic acid

(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...496

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1235

gcgccagctg	acaccgcagg	agagacaaga	gctttggagg	ctgattcgga	tgtaaaacgc	60
accttgccct	atgccaaaat	gatcgcagct	actotgatga	aacgtacgaa	tatatggaaa	120
cgatgcccg	tgagaaaagc	agacaaaagca	tctcaagcgc	atggaaaagg	agatgaagca	180
gcaatacatg	ccggagtga	acgactgacc	ctccggcagg	ggaagctcct	gatcaagctg	240
atcgacgaca	gtgtgcacag	tcgagctatc	agctactcaa	agctttttctc	ggcgatggaa	300
agcgggatgg	tggaatctct	tcgcccgcct	ctatgggtgcg	agctgaagac	tcggtacgaa	360
cctgacaaga	atccggaaga	cgccctgacg	gacgaatagt	tttgtttagtg	gaagagaaaa	420
gaatttaaca	aagttctttg	cactttcggc	aaaaaaggct	atattggcct	ttgtttttca	480
gagacgactt	gattat					496

(2) INFORMATION FOR SEQ ID NO:1236

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 678 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...678

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1236

cctgcattg	ataaccactt	tacgcttggt	gatagcagtt	accctaccct	tgccacttgc	60
ttttcgttga	tggtattgag	cgttttgtca	taagcagctc	ctgctcctga	cgactcacgg	120
cagcatggac	gccaccggcc	tcaaactttc	ccagttgaaa	tcctctctgg	gctgaatggt	180
ctttaagttt	tccattgttt	tttaatcgtc	ttgttgctaa	tagattggac	attatatggt	240
catattctca	aaagcacggc	aaagttacaa	taacttttcg	ttactctctt	catttgatca	300
acctgcagat	tccccccacc	ggtgcaacat	taagcaagcg	acccaggatt	gactcccaag	360
agtcaaccga	aatcaggaaa	cgacactatt	tgaattacaa	tggtgcaata	tcgatcttgg	420
cgtaaaactg	atcggaaacg	gccgatgttt	cttcacaatt	actgcttttt	ttgacctcct	480
caagcctcat	ttttcagtag	acgtcacgtc	agtcgtcagt	ataaaaaagt	gacgcgtgct	540
ttcctgaaaa	ggcgcgcgag	aattttcccg	ttttggcgcg	agatgttttc	gttctggcgc	600

gggaattatt tattttctgc gccaaaacaa aaaagttacg caccacgttt tcaggggtga 660
 taagccggaa attttggg 678

(2) INFORMATION FOR SEQ ID NO:1237

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 492 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...492

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1237

tattccttat agctggcagt gtctacaaa agtgtctaag ttcttaaagc aatactcatc 60
 gtacgcacat gattcaaata tctgttttcg ttactcttaa gtctctttac cattacgtaa 120
 tctacttgat tctctttgac cacattgata cgtgtcttag atacatTTTT gtcgcaaagt 180
 tggctttttg tacagaagtg aggtttggat agcttgctgc gcgaagatga tcaagtaatc 240
 tccaacgtct aatgtgattt tcgtaaaatg ttctgtacga aaatcgttca tcaaggaatc 300
 ggtttgttgt gttctgtgtg agtgaagta aaccgcatt ttttgtacc ctcttcgatt 360
 tttcattgcc gtcaaaataa ccgcacaaa cctgtctgc cgtaaatttt caaaagcata 420
 ccgaagcact ttcgtttaca gttcaggaat taagccctgt ccccaaatg gttcgccaat 480
 ccagaatcct tt 492

(2) INFORMATION FOR SEQ ID NO:1238

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 470 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...470

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1238

cccgttgatt agagggttat atttattgat tcagttgcaa aagaataagt gataagaggg 60

tgtoccatac	caccaacaaa	taacttatcg	agtgatgcgg	gaggtttgag	gacttcatcc	120
aattcttgct	gagaaatgag	gacattcgac	cttgctttag	tttaggaaca	ttataacggt	180
tggtatattg	atagagtgg	cacgagtaag	accaaacttt	tccatagcct	cccgaacagt	240
atagtgcctg	gagctgcctt	atcaagcact	cctttagctg	cttcgacatg	tttgtggaaa	300
tagtagcttt	tacccttgac	tttctttctg	gggatgttgg	tgacagagat	tgaaatttgt	360
aaacggctgt	gaagcgtcat	atcgaatctt	tctgtatctc	cacgggctgt	acacccattc	420
ttcgatatga	gaagcaggag	cctgttttagc	aaaataggca	tctatattgc		470

(2) INFORMATION FOR SEQ ID NO:1239

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 539 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...539

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1239

cgttctccgt	ttcgcgtctc	gtgggtgccc	ctccgggata	tgtgggctag	aagaaggcgg	60
ccaactgacg	gagcgcgtaa	gacgcaaacc	ctattccggg	ttctcttgga	tgagatcgaa	120
aaggcgcgatg	ccgatgtctt	caatctgtct	tacaggtgat	ggacgaagg	cagctgaccg	180
acagtctggg	acggcgggtga	atttcaagaa	caccgtgatc	atcatcacct	ccaacgtggg	240
tacacccagc	tcaaagactt	cgggcagggt	atcgggttcc	gttcggaaaa	agacaggaag	300
cgaacaagga	gcatagccgt	tccgtgatcc	aaaaagctct	gaaaaggacg	ttcagccccg	360
aattttctcaa	cggtttgac	gatatcatcc	tctcgaccaa	ctgggcaaga	cggagattcg	420
cgggatgggtg	gacatagagc	taaagccgtc	ttggcgcgca	tccatcgtgc	cggatacgac	480
ctcgtcctta	cgatgaagcc	aagggatgtg	atagcgacca	agggatacga	ccttcaata	539

(2) INFORMATION FOR SEQ ID NO:1240

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1583 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature

(B) LOCATION 1...1583

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1240

gatataagagt	cccttgctgt	gcctgcaata	tcogtcaaga	tatgcctgtc	tctccgatga	60
aggcattcag	caaggagctt	ttccctgcat	tgggcggcac	gatggctatt	cgagggagtg	120
tttcgtccaa	atccgattgt	ccgttcttgc	cggcaatagc	tccatcacc	tgctcgagcaa	180
atcgctgtt	cccgaacgct	gacagctgca	atgcagtaag	gatcgcccaa	gccaaaggaa	240
tagaatcgaa	gcggaataat	gatcttcggg	attgtccacc	ttattggcta	cgacataacc	300
ggttttttgc	ttcgggcgcag	tatctcggcg	acttggtcgt	caaagaagtc	actccgggtct	360
ggttgtctgc	gacgaagagg	actacatctg	ctcctcgaca	gcaatataca	cttgcttatt	420
gatttcttcc	tcgaaaacat	ctccgaattg	accacccaac	ctccgggtatc	gacgatggaa	480
aactcccgac	gttccaatgc	accoggcogt	actgcctatc	gcgcgtagta	ccggcctctc	540
ggctacgatg	gcttgccggc	tttgggtaag	gcggttgaac	aatgtgcttt	gccacattc	600
ggacggccta	cgatggcgac	taatgctccc	atatctattc	tactctatga	tttcgttctg	660
attgttgctt	gtcaggctac	gaccgagaag	gactaatcca	actgatagcc	gaaggcacga	720
agcagattat	ccctgtgcgc	cagtcttttt	cgaccttcac	aaagatttcc	aagaaaaattt	780
tcttccgaag	aaacgttcca	aatcacgcgc	ggccattgac	cctacacgtt	tgaggccgcc	840
cctttagggc	cgatgattat	tcctttttga	gaattacgct	cccgatgatc	agcgacttga	900
tacggataat	ggtcttctcc	tccttgaatt	ctccacgacc	acttctgccg	catagggaat	960
ttctttttga	taatacagca	tatcttctca	cgaatgatct	ccgtaacgaa	aaaacgtgcc	1020
ggcttgctct	gagtgcacat	ttttcaaagt	aaggaggaga	tgggggaatg	aggctttcat	1080
acgcttctgc	agcaatccga	cgtaaagtgt	gttcgtggcc	gaaagaggtg	aatttctgct	1140
ttgggcaata	tattgcgcca	ctcctccaca	agttgtccaa	tgcttctctga	ttgctcaggt	1200
cgatcttggt	gatgaccaga	agtaagggca	ttccattcgt	gatacgcgag	cgagaaaatc	1260
agcattctta	tcagcttctc	caccacgtcc	gtcacataaa	ccagcacatc	ggcatccccg	1320
agacagattc	ggagaactcc	cgcatttctc	gttggagttt	gtaattggga	cgagtactcc	1380
cgggtgatcg	gaataaacga	tttgcacctc	cggcgtattc	aaatccccat	gattctatgt	1440
ctgggtggtct	gcgccttgga	ggtaatgata	aaatccgctc	accgacaagc	agatttatca	1500
gtgtactctt	cccaacgttg	ggtttccaac	gatattgaca	aatcccgaac	ggtgaccgga	1560
ctcctctatt	gcatttcgaa	gct				1583

(2) INFORMATION FOR SEQ ID NO:1241

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 459 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...459

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1241

ggcgttctga	atccgagttt	ctttcttggc	tgtagttcag	tttgttctga	taatggaaat	60
ctgtttggtc	gttatatcga	tgaaagaaga	acctttagga	tgtattgtct	aatcagggca	120
tttttgcctc	tcacagagca	aaaccctttg	tttacacgag	accgaaaagc	agctcaagta	180
aaagctgtct	tgatgatta	gttagagtga	ttttctatct	ctgacaaaag	tcgtcgaacg	240
atattagtgt	cgataacgg	gaaacagttg	tgtgtttgcc	gaaaatacgt	atcttgcagc	300
gcaattgagg	ggaatcctct	ccgttgctat	gaggattgtc	tcagggtgtaa	tggtagcaca	360

acagggttttg gttctgtttg tcaagggttcg aaccttgtga gacaacaaca gagaaagggt 420
 tgtatcggat agtgaaactt cggattgcaa ccctttctt 459

(2) INFORMATION FOR SEQ ID NO:1242

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 394 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...394

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1242

cgctgttcga ttccatgccg gcacatgcac ggagttgggt ggaggctgcg gagaatgcgg 60
 tatcgtgcg gagecgctgg atttctatcg ctgggaagac agaagggtag cgataccatc 120
 aagatcctgt tcgaacgggg atacggagac tgccgacaga aaaagaaata gccgatatgt 180
 acgggcgcaa gagccactct tcgctttgta caattccgga aacgtgatcg acgatgctcc 240
 ggctcgggtg cggacgtttg tgaccggggc tttgcgtatc atgctggtga caggtcgtcc 300
 cagactgata tattgcagcg tttgcaaaga agttattggc gacatttcag tcctgcaaac 360
 atggtgacag gtgccgatgt acaccgtgga aacc 394

(2) INFORMATION FOR SEQ ID NO:1243

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 878 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...878

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1243

ccgcaaagcc cgtcgagagc tacgcacctt ctctcggtcg agggctttct caaagcctgc 60
 acaccattgt gccggcgaaa gagggaaaga atatcgatgg ttggggagat ttgatcatga 120
 gacaaaaata agcgggtctgt accaattttt tagcgaaacg atattacgat ccatcctaaa 180

gttcgggcca	aatcagttgc	acggggttgg	ttatgcgcaa	gatttttctc	ttttgtcctt	240
cttgaaacgt	gacgtgcacc	gaaaaagttg	atgctcggaa	tcggtcaa	gtttgacata	300
attaacatca	gcacgatagt	ccatttagag	ccggtgccat	agatggagca	gtttttgtag	360
ttaatacagt	gtacatttgt	gtcgataaaa	gggaacaacc	cttttcgacc	gcatcaacat	420
gctgataatg	aataaaataa	aaagtgaag	caatataatg	aacaagcaa	aaaacaatcg	480
cgaacgaacg	ctcagcccga	acaggatacc	gaaagagacg	aacaactgac	aaacagtcag	540
aaaatgatat	agatagtgcc	cccgcagccg	aagagaacga	caaggtggag	acccggtgga	600
gcagctcacg	gctcagttgg	ctgctcttaa	cgacaccact	gcgtttgatg	gcagaatatg	660
acaactaccg	caagcggaca	ctcaagaaaa	gagcgaactt	atccgcaatg	gaggagaaaa	720
ggtgctcgtg	ggatcgtcgc	ccgtgatcga	cgacttcgag	cgcgccctca	gcaatctggg	780
cgactgtcgg	agcctgctgc	catcaagaag	gagtgggaact	gatctacngc	aagtcatgga	840
ctatctgcag	agcatggtgt	caaaaagata	gaaccgca			878

(2) INFORMATION FOR SEQ ID NO:1244

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 441 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...441

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1244

gcgcagctct	gtcggtagat	gggatattcta	tatggcacag	aaaggctatc	cgtcttttacg	60
gtggatagtc	gcggatctgc	caatagaggg	gctgctttga	gcaggttatt	catcgctggt	120
tggggcagac	cgagatggcc	gatcagagtg	cggtgtggat	ttcctcaaga	gccaatcatg	180
ggtggatgcc	gatagatagg	agtacatggc	tggagctatg	gtggctttat	gactacgaat	240
ctgatcttac	gcacggcgat	gtcttcaaag	tcggagtagc	cggcgggcct	gtcaagactg	300
gaatcgatat	gagattatgt	acggtgaagc	gttatttcga	tgcccacagg	aaaatcccga	360
aggatacgat	gctgccaacc	tgctcaaacg	agcgggtgga	tctgaaagga	cgacttatgc	420
tgattcatgg	agcgatcgat	c				441

(2) INFORMATION FOR SEQ ID NO:1245

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 590 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...590

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1245

```

ccccgaatga atggttgacg gatggagcgg gagtattcgt ccacataccg tgcagctcta      60
ttcgtctgtc tttgcgacc tcctgaagag cttcagaacc aaagcttcga acaaaagggt      120
aggatcgtgc atttcggag tcagcaacgt cctgtatagg agaggatgaa tttgccacaa      180
ggaagcgatc ctcgagaaaa agctcgggat catatccatt gtagatcaat tctgtacgag      240
gattacttct gcgagcagat tgcagtgccg ggggtgatacc gaaactacac gatcgctttg      300
tggagataat ggtttcggag agaaatatag cgggtgctgaa gcccttcacg agcagacttg      360
gcagtcgctt gccacgagga agaaaatcgt agtgctgtac tgttcgatca catcgcgcca      420
atccgccacc cagggcaatc gtgtgcctgt gcatagcggc aagccgtagc aaggggaaac      480
ttgcgatagg aagacaaagt acagcatcga atttgacact gggaaaagct ttcgccgctc      540
tttgtagaat cgctcttctt tctgctccca aaacaattcg ccgaacagcg      590

```

(2) INFORMATION FOR SEQ ID NO:1246

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 427 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...427

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1246

```

tccccggccc gacatggtgg aaaatacgaa gcagcagccg tcggagaggg aacgtggtga      60
cgaagatgaa agaaatcggc gccctcatcg gaggagaagc aatggcggag taatccttcc      120
ggagcttcat tatggacgcg atgcattgtg ggaatagccc tattcctcac acatatggcc      180
aagcgcaagg aggcgggagc cgcattcgag ccgaataccc tgcatacttt atgagcaagc      240
agcgatggac acccctgcag gtaccgatac gcagcgtctg cttcagacca tgttgaaagg      300
tataagaacg aacagatcag taccgtggac ggcgtgaaga tcgctttccc gacagctggg      360
tacatatgcg caggagcaat accgagccga tctcagggat ctacaccgaa gcccgtagcg      420
aaaatgg

```

(2) INFORMATION FOR SEQ ID NO:1247

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 987 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...987

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1247

```

cggctcctta ttatgaatca ttttcagttt ataaaatcga ttccaataat atatagagaa      60
cgaaaaacgat tcgcatatag accgttggct ttcgatggcg tttcgggaga tgataaaaca      120
gaggcaccca ccgagttcgt gatcgaacgg gtgggtgcct tataccttg gttgtcgata      180
ggaggcttat cagtcttatt gatcacaagg atttttgttt gttgtagggc gaatggatta      240
gatcacttca gctcttggat gagacggggg cactgacccc atttgtcaat catgagagaa      300
cgtagcggat gtccacgctg attgtgcgct gcagatcggg ttcaactcga tgtcaccact      360
catagcttcc cagttgccat cgaaagcaag acgatcagac ggccgttctt atcgaatacg      420
gggctaccgg agttaccgcc ctgatgtcgt tgttcgatag gaaagcgata tggagctgac      480
cgttctcggc tagcgaccat agtttttggt gcggaagagg tcgaggatat tctcctgtag      540
gcaaactcat cgctcttaag gaatcctgct tctccaatac gcccttgctg tcgtatgata      600
gttgtagcag gcaccgtcct gcggttcata tcccttgtag agccgtagct catacgcatg      660
gtgaagttgg catcgctcgg cagagccgtc cggggtagat ctcacgcaaa ccggcaaaga      720
aaagacgctt gccctctcaa tggcataggc attggccatc gcacgcggct gaatagcgcg      780
agcacagcta ttacgctctt ggaaagctct actgccggat cttttctcga tagcttggca      840
aacttttctt tgtccatgga cttgagcatg gcattggaact tgcgctataa ggaaccacac      900
tcttgtagaa tacgaagtct gcatacttct tgggtgcgct ttgaattctt ggcgattaca      960
ttcttgaata tatcggggag ttgtcggg

```

(2) INFORMATION FOR SEQ ID NO:1248

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 789 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...789

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1248

```

ggccgatctt atctccccct ggtttcggga aaatggcgta accgaagcgc tgatcagtgg      60
cccaacaagc aagaccgaac cgcgcaaggc gcgactcttt cgagaaactg ctgcgttttg      120
atatagtcca gattcacatt atcagctgga aaacacaagt atcgcgggtg ggtcttttta      180
ccttaacccc catgttcgaa gcaggtcgat caggttgttc acatccaata tatcggggat      240
gttaccacca caacctcctg atcgggtcaat agcgtagcag agatgatctg caaacttcgt      300
tttttgaccc ctggacgaga atctcaccct tgagactgtt gcccttctta ttacgtaaga      360

```

tgccatagag	ataatgtggt	ttatatgtct	gttgattatt	tccgccggaa	taccttggtc	420
cgtttggtgt	tgttattgtc	ctccgatccg	aagcattcgg	tatcgtcaga	tgacaactct	480
cctccgtcag	tctatgcgcc	cttcggacag	ttcgtaaaaa	tccttgaata	tcttgtagta	540
tccaccgtat	ctttgttcca	tgtcagatac	gaacgcttca	tctgggtgcg	atgagcagct	600
ccagcgcata	acgctcttct	ccctgctcca	tggcacagcc	ttgaggatca	tttctgtat	660
gagatggccg	tagtgccgat	atacgagtcg	ttggccgagt	agcttacagc	tttaggcttc	720
cgttcgagca	gctccgactg	atgatctcca	tcggataatc	gatatccaac	ttgaatccgg	780
acatatagc						789

(2) INFORMATION FOR SEQ ID NO:1249

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 434 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...434

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1249

cctacagccc	tatcttggtt	cgcccgaaga	tttttgcct	tgacggacca	tagctgaaag	60
tctgcttata	gggggtatgt	cgaagtcgtg	atttgcggtt	tggcataacc	ccctttcagt	120
atatgcaaag	aggatgttta	gatgtgaagg	tggaaaggta	ttcggcaaag	gcggctacat	180
tctccgatgg	agtagccatg	aagtgaccag	acgaatggct	gagctgtcgg	gtgatacggc	240
ttgccacagt	agaagtcgaa	tacggttttc	agtctttcga	tcagatcggt	gggggggatcg	300
ggaagatctg	gttggtttgc	ggagggtaga	ggaaggaata	acccagaagg	agatagctgt	360
cgccagatct	gctgccattc	tgttgccatg	agtgcaagcc	ggtagtaaag	cccacgcgg	420
aaaagcgtgg	caaa					434

(2) INFORMATION FOR SEQ ID NO:1250

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 582 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature

(B) LOCATION 1...582

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1250

```

aaccgggtag aaaagaagaa aagaagaatt acgtcaggcc ttattcatct cggaacaatc      60
gcgcaagaaa agccgcgaca gcatcgtgac cgatgcgggt acgtggggcc tccgtgcaga      120
gaagcctatg cccgatcggc cgataaatc ctcgcggtac ggtgatcgac ctgaatgcag      180
ccgattcggc taccctactc gcatacccg gtaggggctt acattcgctc gccgcacgt      240
atcctccgcc gacagcttgg cggctactat accgtgctac agctacagga ggttacggca      300
tggtactacg acgcttttgc gctctgagac catgggtcaa aatggaatca agccggatcg      360
tatcgatcta aaaggagtcg taggagatag taccttcggc atccttataat taactataaa      420
caacggggccc agatcaaacg gtgctacgca gcagccaatg gcagggtagc tggggttaca      480
ctactgaagc accgaccttc acaaaagaag acagtataag actttcaccc tatttcgatt      540
aactgaatg atatgatcat caagattacc ccgacatcca ca                          582

```

(2) INFORMATION FOR SEQ ID NO:1251

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 525 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...525

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1251

```

gatgccgagg agcatgtgtc tgatgccacc caagctgtct attttggatc gtagtcctga      60
caggcttgca gtagtttttc ttccgaagca tatacatcgg tgccataatg ttttccggca      120
ggatgtcgat atggtcgaga aagtcctgcg caatttggcc agacagccta agttctcgct      180
gaccggtgga tagtatcgaa tacggtgaag gcaatcacgt tgcggaagct gagtccttcc      240
tcgctgtttt ttgtatcagt ttgtcgtaga cgatgaccgg cgaattgcct ccggcagagc      300
cagggtgtag tatttgtgtt gtgcttgcca ctcccgata tccgtgctat tttcgttggc      360
aatgacttct gctgcttcgt cgttggtgcc ggatatattg gtcggtatat tctcgaagcc      420
gacgtagcag ggtctcttcg tagtattctg cggacgggta gtatcgtcog gtatttcgga      480
tagagaaatc tggacttang ttcaatctca tcttcttgtc gtttt                          525

```

(2) INFORMATION FOR SEQ ID NO:1252

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 858 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...858

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1252

```

cggctacaag cgggagatga gcggtgatga catcggtgtc cgattctcgt caactgcat      60
cagggggaaa agatctatgt acgatcggcc gtttcattgt cagcgaagcc aatgcgctct      120
ataatctgga agcggagcaa gaagagggtt caaaagtgtc ggagggaatc cggccaaggc      180
tttctcgcgt atacgcctcg cgctatagag cgttgggagg aagccctcgg tacggtggaa      240
gtggaggagg cacaccgatg gaaaagacga tattctatac cgcactctat caccgctgat      300
acatccgaat atcctacaag atgccaatgg agaatacctt atgtgggcag tggcaaaacg      360
ggtaatacgg ctacacgaccg ctacaccgtg tttctctttg ggacacgtac cgcaatgtac      420
accgctgctg ctgcctcctc ttccggagaa gcagttggat atggtacgga cactgatcga      480
catgtaccga agagcgggtg gctgccgaga tgggagctgt acggacagga gaccctgaca      540
tggagggcga cccctcgtct atcgtcatca atgacacttg gcaaagggcc ttcgtgcttt      600
cgaaacggga acggcctatg aagccatgaa aaaaaatcct ctccggcagg agcgacccat      660
ccgatccgtc ctgacaacga cgactactca ccctcggctt cgtaccgctt tcgcgaaaca      720
gtacgacaat tccgttcgca tgcgtggaa tactatctgg ccgactggaa tctgtcccgg      780
tttgccacgc acttgggcat aaagaagacg cagctctatt cggaaacgcc tcgtgggcta      840
cagacactat tatataag                                     858

```

(2) INFORMATION FOR SEQ ID NO:1253

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 889 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...889

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1253

```

cgctgctctt gataagatcg tgcacagttc tgttttctcc tcccgattct ctcttttggc      60
gactctccgg cttcttttgg taggttgtct ttcccgaag cgggtatcga gtgtcggggg      120
ttgtggagga ttcttacgtg caagtcgggt caaacaccct gttttcaaaa ctcccact      180
ctgcctctgg tctgctccgg ttatagatat gtgtcttcgg attattatta tgatggaccg      240
atgattttgt gggatatgga gttccggaag ccaaatecgt cgatgctttc ccgaggagga      300
gaaagctgct cgggcagatg cggtaaatga agcagaaccc gaacgaagga atccgggatt      360
caagaatcct ccgtgcgtac caatttcgct gaactgcatt ctttgagccg gcattgctga      420
ccgatgaacg gggcgaagtt tttggtcttt cactctgccc gagacactga cgcgctggca      480
cctgctcctc ttgcacatac gaaggatatg cggttgggca tgaaagacga aagcgtggag      540
tgcggaaaga ctttatgctt acaccaatt tgccacgatt cctgagaagg gtgacaaggg      600
tacggcttcg gcttcgattc ggaacgggag cgagacgtgc agcagggctt cgtccgtatg      660

```

```

gaactgttcg accctgctac cgacaactat tgggcggcga gaggcttccg ttctcggtgg      720
aagccggtgg tacggtacgg tgcgtttcc gctcgatcct gtctccggat atgatgctct      780
gggttacgtt tgttagccga aagccatgac ttcagcgatg gagagcaaca ctcatcgtgc      840
aactgccggc tacggagcga gtggtggaga ccataccgtg atctctacg      889

```

(2) INFORMATION FOR SEQ ID NO:1254

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 856 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...856

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1254

```

cggactttta ttttcgaaaa atagaggctt ttcgctattt gtaagtgttg attatcaaac      60
ggtgtctttc tctatttttc gaaaatctaa aaaacgaagc tccctctttc ttatttttoga    120
aaacggaaaa tcaagaaatc tcattgttat caatgagata taatcaactc aactgcaaaa      180
atagtgttgt agctgctttc tcaacttgta ttttcgaaaa aaatagaatc gttctctgcc      240
aatgcttacg tttgggatta ttcgtaactt gcagtcgctc aagtactcac tataatacac      300
agtccgtaag gctattaaga ctactgacc atgaggtaaa gtaccattct atcggactca      360
ctatacatat acagtccgta aggctattaa gatgtttcgc catgacttaa taagttttac      420
aatttttgac tcactataca tcacagtccg taaggctatt aagacattac tgatagcact      480
gcaatagcag gaataccaag ctactatac atacacagtc cgtaaggcta ttaagactgc      540
gattttcttt accaaaagcc agttttactg ttggctcact atacatacca aggctattaa      600
gactttgaca gcccttctta attcccctct ctataaactc actatacata cacagtccgt      660
aaggctatta agacctatca tcgttgatc atctgataaa gccctaccca aaaactcact      720
atacatatcac agtcctaagg ctattaagac tctaagcatt atagctatac catcattaat      780
acttgctcac tatacatata cagtccgtaa ggctattaat acttgtgagt ataggctttt      840
ctactccttc ttcctc

```

(2) INFORMATION FOR SEQ ID NO:1255

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 858 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...858

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1255

tccccgcgat	agggccgcta	caggtgagca	atgctcgcct	gcttttccca	tttccatgcc	60
tgaagatgag	gggggtgtac	ggttggtggt	gaacaatagg	atgagtccga	cctgcaagtt	120
gctgtcgtat	cgtaccttc	atttgtagcg	tggacgatcg	ggcattccgg	ctgcaagctc	180
gtgagcccag	agagctaate	tttcgcttgc	cgtacctcgc	aatatgcctc	cggggatgaa	240
ggacggcctc	tcgttttgga	ggtaacctct	cccgaaacag	gaaaaaaagc	cgttattccg	300
tcattggtctc	cttgccgctg	gtggacaatt	tccttgccct	cacgcagccc	aaacaggcgt	360
tatggaactc	agcacctatt	tggacatggg	acgttggtatg	gagagacgac	aaaggctgcg	420
atagagattc	gcaacgtcgg	tccggccctc	tccgattgca	tagcgtcacc	acacgcaatc	480
cggctttgac	gocgtacccg	accggacgga	gataaagccc	ggcgggaagca	cactattgcg	540
atcgtctgtg	atccgcaggt	gatgaaggct	gaggggtggc	agagtatact	gccgatattt	600
ccattatttg	caacgatccg	caggctccgc	tacgtcgcac	aagggtcaaa	ccgaactgta	660
gcttttcccc	gtagagctgc	tgccaacggg	actgcaagcg	agattgccc	cagatctgat	720
aaacagaaca	ttaacatgga	cgaactactt	catcatcccg	aaaatgatga	ttgctataag	780
ggacgaaagt	gaacaaaggc	gtttccaata	tgcccatcat	caatccctac	ctgataggac	840
aagacgcaag	aagcttga					858

(2) INFORMATION FOR SEQ ID NO:1256

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1101 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
(B) LOCATION 1...1101

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1256

togtatectg	cttaccctcg	gtatccccgt	atacgactct	gacagcagac	caaattggctc	60
aatgatcaca	gccctgtcgt	ccgacaggca	ctgacgggct	cataggcagc	gatctgtacg	120
agaacggcat	actcaggcga	gacaggcggc	tacggctatc	ttctcctccg	gcgatctcct	180
cgaacaggta	aacgggtcat	acatccggaa	gtcaaaaaag	acttctgcca	atggcgcttcg	240
gagtggaatc	ggatctctgc	gccatcgaga	gtgccattct	tttcagctcg	ggatcaactc	300
cctgtgcgat	acggtaattc	gggtcgatgc	ccccgaaaag	atagacaaga	gcggnccgatg	360
gctcgcgacg	gctcatcggc	agaaaccatg	agcagcgtat	gctcagccaa	gaaagagagc	420
agtcattggc	caaggccgga	gagaccatac	ggtgctcaac	gccccacccc	atctacttgt	480
ccctcaagtc	tcagaattat	agagacagta	cgaacaaaga	gacccaatcc	gcccgatcgc	540
tttaggggaa	taagacaggt	gcttccctgc	tctcctaccc	ctcgacagaa	cgaataactt	600
acttttgcag	acagtcaaaa	actgaaatac	aatatcataa	cagaaaaata	tggttgaacc	660
catcctttcc	atatccggca	aatccgattg	tttcggctcg	tatcgcgcg	aaagaatacg	720
ctcatagtcg	aagcctcgac	acgaaacgta	gaacccccac	atacccatcg	ggaccgagta	780
gttccccttg	gcggatatatt	ccattttacac	catcgaagat	gatgtccctc	tgcgaggtt	840
atggaaacga	tataccggaa	gaacgaaggc	aaacagctcg	atctcctgct	ctcacgaagg	900

```

acaacgactc actacgtgct ttcttcgggg agtactgccc gaatacgacg tcgatagagt      960
atatccgagc gatatacgca gattatctct tggtagaatc ttctggtgga caacggattt      1020
accactttct ctccgataag aaaccggcgg aagaagagac gacggaaaaa gaatagcaac      1080
ttcggccggg gatcgctctag a                                     1101

```

(2) INFORMATION FOR SEQ ID NO:1257

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 690 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...690

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1257

```

cgaagtatcc gagcaaagaa gaaaatagaa aaacgataaa agtagaatag catacgacaa      60
tggaatgca gtatctgcaa agatctgggg gataaaaata tcatgacaat gcccacaagc      120
ataacaatag aggcaacaat aaaataaccc acccctgaac ggaaacaatc tctcgattg      180
tctctcgatc attctcgcaa tcggcttata taatgtaaat gatatagccg tagctatccc      240
catctagaca agttgagaag gcctaagaga ttagtaattg tagtattgag tcctggagtt      300
cggcacctaa ggcatacata aaaactctac gtgagaagaa agtaaaataa taagaagccc      360
ataaaacaaa agtgagatta tactattttt tgactattgg tcgttcgaga agtctccacc      420
agatatttct ttatagttga taaataataa gacattgcac aaaacataaa ggcattgctc      480
cacctcatat gggaatctta gagctaaggc caggcttcat ttgatagtaa aaatagccct      540
cttatcctgc atactgctaa tagtccaagc cataaccgga tccaccaatc acgatgttcg      600
tcatagcgat gaagtctagc tagcgacacg aagagctacc aggacatgat gtcgattgga      660
taagtcgatac gggataatac tgggcaacca                                     690

```

(2) INFORMATION FOR SEQ ID NO:1258

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 686 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature

(B) LOCATION 1...686

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1258

```

aacaaaaaga cttggaagcg cagctgcgaa agcagaaaaa gcaagccgag ctctgaacag      60
aaagatcgag aaacagattg ccaaggaaat agaagctgcg aacgtcgtgc tcgagaagaa      120
cgtgaacggg tggcacgcga agccaaacca agggtaagcc gggttcctgcc gaaccggaac      180
ggaaggcgga gaccaaggcg gctatgctat ggatgcctct gagcgtgctc tctcgggcag      240
ctttgacaga acaaaggctg cctgcccggc cccgttcgag gcagataccg aatctaagcg      300
actttggcgt gcatcagcac agtgagctga aaaaagtaca agtaataatg gaggtatcga      360
catcgctgta gcaacaggat ccgatgctac cacgtnttca atgggtgtagt gtccagtgtg      420
ttcgtgatac ccggttataa tcggccgtaa tgggttcgtc cggttaactat atcacggttt      480
atgcgaatct agcaaagtgt atgtaaattc cggcactcgt gttaaaacgg gtcaggctct      540
gtcgtgccta tacggatcct tccaacaacc agaccattat tcaactcgaa tctggaaaga      600
acgcagcaaa caaaacccaa gactatgggt acgatagcat tccaacgact ataatacccc      660
atttcgagac ttcttgatt ccgaag                                     686

```

(2) INFORMATION FOR SEQ ID NO:1259

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 434 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...434

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1259

```

tcgataccgt ggtatcgat gtgacgctg tggagtcgag gtaacggaaa gaaagttcgc      60
cgtgagcgta tggggcacat ccatttggtc gtacctgtgc tcatatttg tatttcggt      120
ctcttcgaa taagatcggc tatttatagg actacctacc aagaagttgg atgccatcat      180
ttactatgaa cgctacgttg ttattcaacc ggggtgtgcc gaagggttga gtcaacttga      240
tctatgtcag aggaagaata cctcgacaag cttgatgaaa tagagcgcac tcacagggca      300
accaaaattt ggaggatacc aatccggaca aatttattgc caaattgggg cagaggctat      360
ttatgatctt ctatgtcgtg tggatctgga tttatttcct acgaattgcg agatcgtgcc      420
aatacagatg gttc                                     434

```

(2) INFORMATION FOR SEQ ID NO:1260

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 614 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...614

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1260

aacaatatga	cgggggtgga	atacagcttt	ggcaaagtct	gcaatcctat	tacggggatt	60
ccgtattcgg	attcgtgagc	aatagcggta	tcaagataac	cgcacggact	gcccgaatgc	120
gccggatatg	ttcagccgat	acggttacgc	atcatcgaag	ctcgctggag	cggtaagggg	180
tcgaccggat	acgaggtaca	cttcattgtca	taggacagga	caatctggcc	atcgtgacga	240
acatacttcg	gtcatcaata	aagaaccagg	cgtttttggt	ccgagcctat	tcgacaattc	300
gaaggacaat	ctcttcgaag	gggtgttcac	ggtcgaagta	cccataacct	gacactatcc	360
atcctccttc	gcaagatccg	tgctacgcac	gggtcaagtc	ggccgaacga	cattgacagc	420
cccttgcaag	tcttttagtag	tgagtacatg	gtctggatga	tgtgtatcgt	attcttgagc	480
agaacggctt	caagtcttta	gtagtggagt	acatggtttc	agacagaata	gcgtatatcc	540
tatcaatatc	gngtaattgt	ataagcggat	aaggtatggc	gagaatcctg	caccggcagg	600
aaaaaagctg	acgc					614

(2) INFORMATION FOR SEQ ID NO:1261

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 615 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...615

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1261

gaccatagta	tcctctcata	ggagaccata	gtatcctctc	ataggagaca	tagtatcctc	60
tcattgtgaga	ccatagtatc	ctctcatatg	agaccatata	tcctctcata	ggggaccata	120
gtatcctctt	gtatgagacc	atagtatctc	tcgtggaagt	tcattctttg	tatctcaggg	180
aaagaccggt	gagcagtgtg	tcgctgtcaa	gtnaacagag	agcagtggcc	gaatacgttg	240
ccaatgataa	gcataatcgac	ttggttcgaa	aatacattcg	ggctttccta	tatcattcgc	300
tgccatgacg	tccttgaatg	aaacctcttc	tcgtcggatg	atttccttgt	tgtgccatcg	360
ttttgtgtca	ttgagatcat	accataaaca	caaaaacaat	cggccgacac	actgtaaaat	420
gaatggataa	agtgcctgct	tttgccgaaa	ggctctcagaa	aagaaaaaaa	cacaaagagg	480
gcgcacgggt	agatgcgccc	tctgcttttc	agtcgcccct	atcttcaggg	gattattttg	540
cttgctattg	agccttttga	acagagccat	tcattgacaac	aacccgatct	gctgcttcaa	600
gagtctgccg	aaact					615

(2) INFORMATION FOR SEQ ID NO:1262

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 630 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...630

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1262

```

gtgctgttcg gtcttggcca tgaagtcctc catatctacg ttgcctcgcc gtcgcaagct      60
accgtcaccg tatcgtatcc gcactggatg gcactggcgg attggtaccg tgggcagaag      120
ccggcaggat aaccagatgg cgggtgtcctg tccgatgctg ttcagatagc cgcgaatagt      180
gagcaatccg gtgtatcgcc tgctgcaccg gagttagggt ggagcgaaaag tggcatcgaa      240
accgggataa cggccaagta acgttcgagg ctttcgagca tctcgttgta gcctccgtct      300
ggtctttcgg agcatacggg tgaatggcat tgaactgcgg catgagaggt tgaacagctc      360
ggatgcggca ttcagcttca tcgtacaaga accagcggaa tcatggagtg tgccagtga      420
atgtccttgc gttcgaggcg ttgatgtagc gcacagctc cgtctcgggt tggtagttgt      480
tgaatacgtc tagtccagga agttcgaggt acgggcaaaag gcaccgtcga aataccgttg      540
tcgatggcaa tgcctccga gatgtctcct ctttgcccaa aacggattag aagatataga      600
gcagaacacc gaggttcgga cggcagtgta                                     630

```

(2) INFORMATION FOR SEQ ID NO:1263

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 602 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...602

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1263

```

gccaaagccg ccgatattct tttgcgtaga ggctattttg tttacaacct ctgggcggat      60
ataaaggcta tccgtacaag taagtgtatc ctggagagtt tcgggacagg tttctctact      120
tgctctctac ccatagctct tgttttctct cctttacccc gaatggatcg tctaagcct      180
tcatatattg ttcgaaagca gccattctct gcttggttgt cggcaggcct ttgtttgcgc      240

```

```

agagcatgtg gactacgtcg atccgctgat cgggacgcta agttcttttg agctagtgcg 300
ggcaatacct atccggtgat cggtttaccg tggggaatga atactggaca ccgatgaccg 360
gtgtaccggg tgacggctgg caatatacct accggcacac aagattcgcg gattcaaaca 420
gacccaccaa cccagtccct gatcaacgac tacggccaat tctcccttct tccccttacg 480
gcaccgcaga gccatcatcg aacgactcca tagctctgac taatggtgca agcaactctt 540
tcggacgaac aagacctcgt ggttcttcgc acaaagcgga gacggcgagc catactatta 600
ta 602

```

(2) INFORMATION FOR SEQ ID NO:1264

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 872 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...872

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1264

```

aaggcctttt tccggggcaca cttcgatcac acacatttct gtgataatca gtttacttgt 60
ccttttgccg taagtggcaa agagcatttt ttcatgattt ggggttaccg ttggcagtat 120
gtcccatagc taaaattacc ttgcgggtcc tatcagcaaa tccatggctc ctccataacc 180
gggtgctttc ttgccggaat cagccagttg gccaaagtct cattttcgtc tacttgagct 240
gcttcgagta cactaacatc cacatgcccc ccacgaatga tggcaaatga ggtacactat 300
caaatgaagc agcccccgga atagccgtaa tggagcctcc cccgcattga tcagataagg 360
atcttctttg cctgtttccg gagcagggcc cacccaatca tgccattttc agactgcaaa 420
tatacttgca ctccgggttt tggttaattg gcaccatcgt cggcagacct ataccgaggt 480
tgaccacatc ccattcttca attcgagggc aacacgcttg gcgatcactt ctctgattta 540
tctttttcca tgatgaaaaa tattttatcg atttctattt gttattcatc tcttatgaaa 600
ctcctgagcg atgaatgaag caacatcatc agcatattat tggcaccgaa tcctgcatca 660
tagccaagct ctttggccaa ttcatagtga tacgaggccc tccacaggcc aagatcatct 720
tatctctcag acctttgcct ccattgagttc gaccagctct atcagattct tgatatgcac 780
atcttttgtg ttactgtntg agataccaaa agancatcgg cattcagttc gatcctttgg 840
naataaattc ttcattcggc acctgactgc ca 872

```

(2) INFORMATION FOR SEQ ID NO:1265

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 726 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...726

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1265

```

gttgtgatcg tagccgagag ggtcatatag ccgccgggca atgacttgca agacacagaa      60
tatccggggc cggggcagcg tgccggagcg caaacagtcg cccgtgcggc cgaatccggt      120
agctatctca tcgaatatca gcagtaccgc gcttcggagc agagtctgcg agcttcgacg      180
agataccggg gatagtgaat tacataaccgc cggctccctg cacgatgggt tcgaggatga      240
gggctccagc tcgcgccctt ttgccgagag gaggtctcgg agcggctcta tgtcgccggc      300
agccattcgc caccgaagcg actcttcggt tgtggcagga aatctgtacg ggcaatgctc      360
ccgagaaaat gccgtgcata ccggtaacgg gacgcatacg ctcatggcgt gccagggtatc      420
gccgtggtag cccgaacgga tgtagcgaat cgggtacgct tgcctctgtc gcaggcttgc      480
tgatactgca agccattttc atggctacct ccactgccac cgaaccgctg tcggcataga      540
gattttatct aactcggacg gcaggatgct cagaagcagt tcggccaatc tacggccggg      600
cgatgggtga aaccgccgaa catgatatgg ctcatctcga acttgccggt ctacggccggc      660
attcagtcgc ggatgggtat agccgttatg gctgccacca cgaactatac cgtcgatcag      720
ttcgcg                                           726

```

(2) INFORMATION FOR SEQ ID NO:1266

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 573 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...573

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1266

```

ttccccttat aacgcgggatg aggcaggcgc gtgtacggta agtcgaatgc tgatctatct      60
gtgccgtact catgggtgga aaagggggat tgaccacgtg gtagaatctc cgacggcctg      120
aagtatgcgg tctgcctcgt agcgattctc tgtatctcta tctctcggaa gttctgtgcc      180
tgcttgcggt tgtccgcaaa cattcttcat gggagaagag atgccgatcg ttttcgcagg      240
gcacagtgtc tttccttttg gaacaagata ggctatctgc cgaatgctct tcaactatct      300
gaaccgggtc gccggctatc aatcgctgtg ctatctcgtg caagggaagt ctcctatgcc      360
gtagatcagg aggtcggcac ctgattgata gatataccgg ggagcaatct gtcctgccaa      420
tagtcgtaat gcgtcagccg gggagagaag cttcgatccc cccgacaatg accgggtacat      480
ccggaacacg tctttcagta tgccgggtgta aacgatgggt gggtagtcgg gacgcatact      540
gaacgtctgt ccggtgtgta agcgtcttcg ctg                                           573

```

(2) INFORMATION FOR SEQ ID NO:1267

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 910 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...910
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1267

```

catatgattc atcatagcga ccgaggcatt cagtatgccg gtaagagctc accgatctgt      60
tgcatggncg aggctggcgc atcagcatga ctcagacgga gatcctctgg cataatgcat      120
tggctgagcg gatgaccaat acggctcaga actcgtggca catctcctct tcgaagcagt      180
cttttgatca agcactcttt ctgtagaaca agccgtgcgc atgtacaacg aggcgcgtcc      240
acatcagctc taggggcgaa aacgcctatg caagtcattg cgccagagtc taaaatccgt      300
tactggcaag gatcgaacat tggccggaga ttgccccga gcttaccgaa ggatgaatgt      360
cagacaaaga gctaactttg ctctgtgtcaa ccaaattaga cttaagggtg aggggtgtca      420
acctaaagta gaattataga agaaccagta aaccaattgt agaactatcc cgcccaactg      480
tcaacttttt cagtacacgt caagcacaat tgcggatcga aaaaagatgg ttcgagaaaa      540
aataaaaactc gagccaaaag caaaaaaatc tcgcgcgtaa agattttctt gtgggttcgag      600
tttttgagat tttaggctcg gtaattctcc gtctttcgca caaaaaacia catacgactt      660
ttctcagtac acgtcacaaat caagggaagt cgggaaggat cagtcgcccg gatagggatc      720
tgcagaagga ggaggggtatc gactccccat agtttggttg ggcgcggtcc catcttcagc      780
tccaaatgcc gccttgggct atgtcgctat gttggaacca tgctttatcc aagttttccc      840
gttgagcacg gccttttgga tgtatttggt ttcagctccg gcccgttggc gatgatcggg      900
ggatcctcta

```

(2) INFORMATION FOR SEQ ID NO:1268

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 799 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: double
 (D) TOPOLOGY: circular
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: UNKNOWN
- (vi) ORIGINAL SOURCE:
 (A) ORGANISM: PORYPHYROMONAS GINGIVALIS
- (ix) FEATURE:
 (A) NAME/KEY: misc_feature
 (B) LOCATION 1...799
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1268

cgaaactaaa	atttcaatcg	gatcggcttt	catttcttgt	cttcttcaga	ataatgccac	60
ttagtttttac	gataaaacgt	agtgcggaat	aggaggggtg	ggtacgagat	ttgcgctcga	120
tgcagggacg	cctttgcttc	cataggcaaa	taccagggga	cgatgaactc	acactcgtct	180
ccgataacca	tattctcaaa	gcaatacggg	agccggtgat	ccgacttata	cttctcattc	240
ctgtaagtgt	gatacgtgcc	ggcttttcgg	agttatagtt	tccatctacc	atgaattttct	300
tactaaacga	tacgttttgg	agtggacctc	cacacgggag	gtgcgacggg	atgctctgta	360
cccgtaccgt	ttgttatcca	ggcgatgtaa	actatgcggt	cgatccatca	acagataactt	420
tcttgaagtt	ggtgctgtcc	gataggcggt	gaaggccact	tcgttgctcg	gacgacgctg	480
tttttctca	tcggtctttt	ctcgcacgag	gagaaaacaa	ggaagatggt	taccagcata	540
gcccagggc	catgatgata	ttctttttcg	ttttcatagg	tctatctttt	gagcaagctc	600
ttgaggctta	catattccga	gataatagca	ttcaaacgct	gatctccaca	cgctcctgct	660
ccatcggtgc	acgatagcgg	atggtccggt	attgtcttcg	agcgattggg	tgatctaccg	720
tgatacagaa	aggggaccca	ttgcatcctg	acggcggtag	cgtttgccga	tagaatcctt	780
ttatgtatgg	caggcgaag					799

(2) INFORMATION FOR SEQ ID NO:1269

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 756 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...756

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1269

gtgtcggaac	agctaagaga	cgggatagcg	ttcttcgccc	gaaagtaccg	cacatgaaat	60
acctggccta	tttccaagcc	tataccaata	cctatggaag	caagccgaga	tcattccgtaa	120
atacgaagag	gctctgaact	actacgagta	gtaggcatta	ttataggtag	cagaccggac	180
tgcattgccg	attctctttg	tcctacttaa	aggatttgct	ggaaagagta	ttcggtctcg	240
tggaaatggt	gtagagagta	cactggatgc	cactcttcgg	cgagtgaatc	gtggcacctc	300
tggtcggata	gtatggcagc	tatcgagcga	acggctaaga	ccgattgccg	atagggtgtc	360
atctgatcct	cgggctgccg	ggggaaagca	gaaagatata	ctcaggcacg	cggacaagat	420
atcggcattg	cccgtcacta	cctgaaattg	catcaactgc	aaattatccg	cggtagcggt	480
atggccaaag	atatgcagag	agtcctcggg	actttcattt	ttactccgag	gaggaatatt	540
cgatctgtgt	cttgatttca	tcgaacgcct	gcgtcctgat	attgtgctga	gcgtttcgta	600
tcgcagtctc	cggccgaact	tctcctgatg	ccgaaatgga	ttgaagaatc	acgagttcac	660
acacctgate	cgctgctgca	tttcaaaacg	cgatatcaga	cagggacgga	ctggaaaagat	720
aattcccttt	gctattctac	aggaagaaac	cggtgt			756

(2) INFORMATION FOR SEQ ID NO:1270

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 761 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...761

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1270

```

ggctgataga gcgacaatta ttcgggcacg tacagataga ggaacgaggg agaataaaaa 60
acctcgtaca tgatgggaca ttcgtccatt gccagcacca aatctacgct taaatcacag 120
gccaaaagat tgcaaaggat atggagagct gataaagaaa tatacgggtgt ccgttgtaaa 180
tagaagagggn tttattaaga tccacaatag gattgtgtag ttttgcatcc gtcataagggt 240
ctccttacgt catgaacaga ttaagggaag cattaaaaga aagggggaatt actcaacgga 300
gctttcaact cgcttgggca agagctttaa tatggtcaat ctcatgttgc caacaagcat 360
cagccctcaa ttcctaccct cttccaaata gcgagatttt ggatatggac gtaagagatc 420
tcttggtatc taacaagcaa caaacaata atgaaactga tagatatanc aaaaggatcg 480
gaacacgacc cagtcttttc tcagacgaaa agattgccac attagagtct cgtatccctt 540
aaaggaaggg aaaaaagggc ctatttccta tctttcctgt ctcgttcgaa gcaggagatt 600
aagcttaccc ccgaggaggt agtgcgtcag ttatatcaat ggtgcttacg gaagactttg 660
gttatccact ttctcgcatc aaattgagta tgaggttaacc ttcggtcggg aaaagaagcg 720
agccgacatc gtcatttcga caagcaacaa acagatagcc c 761

```

(2) INFORMATION FOR SEQ ID NO:1271

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1137 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...1137

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1271

```

caagatgnca aggaggtggt gaaagcagca agacagcatc ttgaaagaag cttgtcttcg 60
atthttgtaga tcagatctac ctgtggggta gcttcattgg tgcgatggcc ataataaagt 120
cagtgttagt cggataatcc ttattcccggt tgggagcaag aaaggcaca aaataataat 180
gaaaatgcac ctgactcgct attgcaggaa taattttcca cggtagcaca gagctacatc 240
attggggggt accccaaaaa gacaacaaac ttaaaggccg aagagatagt tgagttgacg 300
ccgagagtcg ggttcgagga tctgccgtga ggggtcttgc gccgttggtg aggagatcat 360
ggaagccata gtatagccgt cctccaatt cgaggctccc agtctgccgg catcgaatcc 420
gaatccggga cctccgcaa cccattcga agcgtccgtg cagaccttgg gcatagcgtc 480
gctgctgcag tcggtgaagt ccgagccttg cttgacggtt ttctctgcaa tgatgaatcg 540

```

aaccgaggcc	ccaaattgag	aaaagcatag	agacctcttt	gccggattta	atgtgtgtga	600
gcagaggat	cgtcacacaa	tcgaatgtgc	gacgatagca	ttgtccggct	tttcgtcaaa	660
tttctcctcc	catactaagc	gaatgtgctc	gcttcggctt	gaaggcccac	tttcaagggtg	720
cccgtactct	cctcattacc	cgtacaatga	gaccgctcga	aggagccaac	aagagctttt	780
ggtcacagcg	ggattgaaga	gcaccttatt	ggccgaaacg	cctccggcta	cccgaacctgt	840
acacgtagcg	actgcttgga	cgtttgggct	gtggccgagt	tttcagacat	aggaaaacaa	900
aaaggctgat	acctattcta	cgaatcatgt	tctcttttga	tgagccggta	tggacaggga	960
aagtatggag	cagtgcatag	aggagttatc	gagatacggg	cacacgatcc	accctccgt	1020
cggagcgtac	gtgacgagga	agagattcag	attgacaaaa	ccactatcgc	cccttatccg	1080
cggaattgga	agtcctctct	caaccccgta	gaaggaagca	tggagagtgt	tcctgag	1137

(2) INFORMATION FOR SEQ ID NO:1272

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 496 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...496

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1272

ccggcgata	tgctacccc	ggtactccct	ctacggaaat	caccgagcaa	tcctaaaactc	60
tcggatggct	aaggaaagaa	atgtccatcg	ggaatggggg	caaacgaaaa	aaccgctatg	120
gaatcaagct	ctcggcatgt	cctacgcggc	aagcgcgctc	tcgtatgtat	gaagcatgtg	180
gggatgaacg	tagcagagac	tgttttatga	atgctgccat	caccggtgcg	aatggcggtg	240
tggtgtcggt	gctgccgacg	acccctctat	gcactcgtct	tcaaaatgaa	caagcttttc	300
gcgtgtatgg	ccagttngcc	atgattcctg	tgatggagcc	atcaaccaac	aggaagctta	360
tgacatgacg	cgcttgccct	tcgatctatc	cgacgttttg	gtacaccctg	catgatgcgt	420
attacgactc	gtctcgctca	cctcgtgccg	gtgtcgttca	gaccgagccg	atcggagaga	480
ncgaattgca	ctgccg					496

(2) INFORMATION FOR SEQ ID NO:1273

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 673 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...673

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1273

```

gatggaagag tcgaatcggc cttcttcgtc tttgaagata tccttgggca ctccaatacg      60
gcattcttct gacgttcgcc ataggcattc tcgctcttag ctogaagtcg aatttgtcac      120
ccacagccag cccgaacaaa tgcttttgaa ctggggcaac atcataccca taccatgtat      180
atagcacaac ggccttcggc cgtggcctgc tccatcaatt ctttctctc tgccaaccct      240
acataaagtc gtagctacag gtcacaaatt tatttgctga aatactcatt ttacaaaatt      300
atcatgttaa acgctaccaa aagtagtata aaaagggatt agtataactg ctcttaagaa      360
acagacgggc aaatttcgcg tctgcaactt tcgagccatc acttttcgca tcggcagcac      420
tcgtttgaat ttatagtagt atctttttcc aaccgtgcct ctgcaattta ttgtccaaac      480
tcttattgat atcagctcca tgcggcctgc cgtcaattcg gcttttcgat ccacagaga      540
cgcttttgcc gaacgtcttt ccacagctcg tagcgttggt gtccagctgt tgtacagcgg      600
aagaaaagca tcggtcttct tctgcgtcag ctccagtcaa ggatgaagaa agcatggcgt      660
ggcatgaac tcc

```

(2) INFORMATION FOR SEQ ID NO:1274

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 649 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...649

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1274

```

gtatagttcg ttcggttgta aatatcgccc atcggtatcg tcttgacaga aattcgagcg      60
tatccactct ggccgaaacc ggatccgaag gaggttggtg gaacctccga tcggagacag      120
atcatcatcg caggctaccg tgaggaggcc attaacgaaa aaacaagaag aaggatatctc      180
ttcataataa tggatgatcg tgggtttgcg tggaaaggca gataattaac gctaatacgt      240
gctgatatt gttttttacg gcgcagtcgg gcagaatgag acaaatacagt tggcgtaaaa      300
agatcgctat agaagttatc gaaagcttct tcatagtcct cttcccttgg tatgggagga      360
aagccttccc ctcaaagag gatatatagt cgtcagctcc ggtgctatgg tctccgatcc      420
ctgaatgaca ccgtcggcat acggatggcc agacggttca aggccaaata gtcggacgac      480
tgctccatta ggacaggtca tcgggcgtga tcttgctgaa tccgagctta ccgaaagagg      540
tcttcgggga tcactccctg tccggcatca tcgtagacgg agtagaccct tttgcttttg      600
caggcaagga tcgtccgata catcttcttc agatccagca gccaacgcc      649

```

(2) INFORMATION FOR SEQ ID NO:1275

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 717 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double
(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...717

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1275

gcaaggagca	gtttttcttt	cattgttata	tccccgcct	gtagcatata	tacagagtca	60
gcacttgctc	ggtaccgaag	cggccgatta	gcctgcagat	ttcagcacct	tggtcaccag	120
agcattttct	tgatagtagg	aggcatatac	gatatgtccg	ccaggggtgt	cgggagctta	180
tccacaaacc	ctttgcagca	ggttgcgcgc	ttttctgaag	atggtttctt	ttcatgtcat	240
tgatgcgtct	attatgctta	atacgtctgt	tattagggtt	tctcacctat	tcgatatctt	300
tgtgtctgtg	gcaggaggga	acgaatcttc	caaccattgg	cttaacaaca	acaagaaac	360
agcttattat	gaatagtgtg	caatttcgcg	aaaacttctg	agtctgcaag	acaatatgcg	420
caattttgcc	ctgactctga	cgccaatcgg	gatgatgcag	aggatttgct	ccaagataca	480
actctccgtg	gcttcataac	gaggacaagt	tcgttgataa	tgtcaacttc	aaaggctggt	540
gctcactgtc	atgcgaaata	tcttcatcaa	caactatcat	aagttggtcg	ctcaciaaacg	600
gttatcgatc	ccaacagcga	tccgtacaat	gtacctcctg	aatgaggagg	gagaggatac	660
gcccgatggc	actatgacca	tcaaaggata	ccggcggcca	tgcacgtgtg	atgagac	717

(2) INFORMATION FOR SEQ ID NO:1276

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 693 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...693

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1276

gcctccgatg	tggtgaatgc	cgtgatcatg	gctccacttc	gcgaactggg	cagcaaatag	60
atcagcaagt	ggaagggttt	tcttacttca	tgccggtagc	gccgtagcca	tatacggggg	120
tacggacggg	gtggcatggg	agcagcacgt	cgggggatgg	ctatgggggc	ggacatcggt	180
atagccacac	cgggactctg	atctcgcatc	tgaatctcgg	ttcggccgac	ctctcccacg	240
tctccacttc	gtattggacg	aagccgaccg	catgctggac	atgggtttct	tcgagacntc	300
atgcagatnt	ncaagcagct	gccgagttcg	tgccagacgg	ttagttttcg	gctacgatgc	360
cccccaagat	ccgcaagctg	gcagcatcta	tttaagggat	ccgatagagg	tggagatcgc	420

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catcagccgt cgcgccgaga gatcatgcag agcgcataca tttgtcacga agcgcagaag      480
ctgccgatac ccgcaagctc ttcgagcagt cggctccgaa gcgtaccatt attttcgccc      540
ggccaagctc aaagtgcgtg agctgacttc cactctccgc aagatgggtt caatgtggcc      600
gatatgcaact ccgatctgga gcagtcccag cgcgaacggt gatgcgcgac ttcaaaaacc      660
gctatgtgga tgtacttgtg gccactacat cgt                                     693

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(2) INFORMATION FOR SEQ ID NO:1277

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 627 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...627

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1277

```

gggccggtga caagcgtaac cgaagccccc aattcggcca aacgtttctgt atgcagaagc      60
ccatccttcc ggaagagtag ttgccgagaa aacgtacaga togagtttct cgtatgtagg      120
gccggctgta accaatgctc tcttccagg aggggcttac aatcgttctc cttgaaaaaa      180
gcctccaata tctccaaatg cactccggct cttccatccg cccctttcct accaaatgac      240
tggccattcg ccttcaccgc gctctatgat atgattgcca taagagcgta gtattccata      300
ttgtgctgcg tactcggatg tcggaacatg tccaaatcca tagcggagcc acgaatacgg      360
gagccttggc ggaaaggtaa gtggttacca actattgtcg gctatgccat gtgccatctt      420
gcctatcgta gaggctgtgg cggagctatc agcatagcat ccgccagag actgagatcc      480
acatggctgt ccatgtacca tcccgctcgg agaaaaatto gctgatgaca ggcttggaat      540
cagagccgag agggatgatg gagtaatgaa ctcccttgccg gcaggagtat gactatttgc      600
acttcagcct cttttttgat gacgac                                           627

```

(2) INFORMATION FOR SEQ ID NO:1278

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 579 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature

(B) LOCATION 1...579

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1278

```

ggctgtgaag tttatgaata gattcgggga agaattgata agaggtgtcg ctggccgaag      60
tcatatacac gctacttgct gccattgaa gggttttctt ggagaaagtc gggaaaaagg      120
ggattcccat cgaactccgt cctgcatcgt tcggtatcag ggtgcatctg cttcgattcc      180
gaatatagcc ctcttgata cacatagtgc cctaaagctt tttaacgtca gttcgacgtc      240
tatatataac gtgagttcga tataagcgtt atgggtgccga ctctcataag tattgtcgat      300
caatcctttg ttgggttaac tataaccgat cagaaaatga aaggaaaaaa tttgacgtct      360
catcggatgt cgaagtctcc cgaagctgaa attctcaacc gagaaatgaa atacgttgac      420
aaacagcata ttgcatgttt tcttgatcgc aatccgcatt gttttatagc cgttcgggaa      480
atactccgaa gggggtcgag ctacgcccta cagcgactcg ggctacgccg tanagcgtac      540
gagctgcgct ctacggctct ttcgagctac gctgaaggc      579

```

(2) INFORMATION FOR SEQ ID NO:1279

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 684 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...684

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1279

```

tctaaaagga tataccgatg aagatagtaa tatgcccaga gctatgcagt ctaccgggag      60
atttggactg gagcggatc gaagaaatgg gcgaatgctg ttctacgaat ataccggtcc      120
ggaggatttg actctgcgtg ctgtcgagct gaaatagtgc ttaccaacaa gactcctgtg      180
actgcggccg acatggaaaag atgccccacc tacgttacat cggactgatg attacaggcc      240
ttaatttata gatatggatg ctgctcgtca gcgtgggtatc accataacga acatccccac      300
tatagcacag aatcagtagc ccaaattggc atctcgcac tacgcacata accatgccga      360
tcggagaact ttcccggcag gtgaaagatg gtgctggcag agcaattacg aacaaatctc      420
tcgcaatact ttatcagata gactgagccg gactgacant ggcttttcgt ggggaacttg      480
ggcaataggt cacgtgtagc ggaaatggc cgtggattcg gcatgaagat tttggcacia      540
catccaaatc tccaatcgag ttgccttctt atatagaaaa gtcccgatgc ctggagaagc      600
ttttctcttc gggctgatgt gctgagctcg cattggcgct cacagtgcaa acccaaagat      660
ggttcgggctg attagctggc cttg      684

```

(2) INFORMATION FOR SEQ ID NO:1280

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 629 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...629

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1280

gtcgttgagc	tttgcttgcg	agaatgtcag	atagaaagca	tgacttggt	attgattttc	60
ctgctctaaa	aaagcttgat	ctatcgtata	accaaactcg	aagctagagg	gtctagaacg	120
tcttacttcg	ttaacaaaac	ttcgtctaga	agtaaccaaa	tccgtaaact	agagggcctg	180
gatagtctca	cctcgcaca	aaactttctc	tctccgataa	ccaaatcagt	aagctagagg	240
gtctgaacgt	ctcacctcgt	tagcggagct	ttatcttttg	gataaccaaa	tcagaaacta	300
gagggctcgg	aacgtctcac	gtccttaacg	gagctttatc	tgtgggtaac	caaatacagta	360
agctagaggg	tctggaacgt	ctcacttcgt	tacaaagctt	cgtctaagaa	gtaaccagat	420
cagtaaaacta	gagggcctgg	aagtctcacc	tcgctaacaa	aactttctct	ctccgannta	480
accaaatacag	aagctagagg	gtctggaacg	tctcacctcg	ttagcggagc	tttatctttg	540
gataaccaaa	tccgtaagct	ggagggctcg	gnnacgtctn	acgtccttgc	aacgcttgan	600
ctatcgggta	accaaataccg	taagcttg				629

(2) INFORMATION FOR SEQ ID NO:1281

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 594 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

(A) NAME/KEY: misc_feature

(B) LOCATION 1...594

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1281

aagagataaa	gcaaattgac	attgcttggt	accagcaaag	catcatacct	tcttcttcca	60
ttgctatacg	tacacgctct	tggcgtactt	ggagatctcc	ttcaaggctg	caggtgctaa	120
tttgatcata	atattttgag	attatttgat	taacgaaaca	aaagtactga	atagcatatt	180
cgcaagtcac	gaataacacg	atztatcagt	acagaaagct	gtcttatccg	attatagaaa	240
gtcttccgat	ttcccgat	gtcttctcta	tttgcgaaaa	tcccggtgca	tagtccatac	300
agtgtgtcta	tgcatttgct	ctctttactc	ctgatgcact	ttgaatctac	tcgaatgagc	360
ctcaaaagcc	tgctccggcg	ataactctcc	aatccggcaa	aattttattcg	accgacgaag	420
ctgtgtagca	ccaactcctg	atctgccatg	atccgttgcc	aatcgctgta	tggactatct	480
ccccttcaga	aacaataccta	atcggtttcg	gcaatccggt	ggctatactc	gtctgtgtac	540
catggcatca	atacttaaca	atcgtgccac	ttaactctaa	ctatccagct	actc	594

(2) INFORMATION FOR SEQ ID NO:1282

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 730 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...730

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1282

```

gogatgcttt cgaaagattg cctcagccgg agccgattcg cagacggctg taogcgctcg      60
ctcctctcct gttoatgagg agcgaatggt tcatcagcga taggagattt gtgcgtgggc      120
gacacggtag cacatgcgcg ctccggatag gaatcatcga atccctcgaa ggagaaggcg      180
ataatgccaa ggctgagttt cgtttcaagc taaggtagga cgcaaacgtc tggtacttcg      240
gtttgcaagc tatccaaagt ggaaaaagat tcgatctgaa ctacagtgtt ctgtctcaaa      300
aacgtttagg acactattgg gtgtacaccg gtttgctctt tgagtattat tgcttcgtgg      360
gggtatatatt cccaaaagca atcctttctt ctatctgttc aaaaccatga gactgactca      420
gccatccatg aggtgctcta attcaaagct aagtgtcgaa cgcccttgag ggtaagttct      480
gtgtacaaag tcgataaccg atatcgatc agtcaataac caaagatgaa tcatccgaga      540
tataacacga gggcgatggt catcataacc ggtgccccaa angtccagtc cggattgtag      600
agtgagatt ctattcctaa gagtccatta atagcatggg caggacatcg gtcattgatg      660
gtcgtccta atggattgca atcgagataa gtcgcgggat tgggtcttcat agatggactg      720
agatagataa                                     730

```

(2) INFORMATION FOR SEQ ID NO:1283

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 921 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

(A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...921

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1283

```

ggcgtttaga ggccgattta gaccataata tcctgccgga gggcgccac aagctgctgg

```

ctcctatgcg	gaaatatgcc	ggcgtaagcc	attctttgcc	aaaagcgttt	cgatcagaca	120
gtagtatttc	acagcatctt	cagttgtcga	atgcctccgg	acagtttgat	accacgtact	180
tcgccaaaaa	gtccgtgtac	tgtttcagca	ccttgacacat	cgtataggct	gcttcaaggc	240
tcgctcgggg	tagcctttgc	ctgtggatgt	ctttacaaaa	tgtgcaccgg	agaaagggag	300
agaatcgtag	cgcgacggat	attctccggt	gttttcaatg	cgtgtctccc	agtatcactt	360
tgacggtagc	tccctttgct	gctgctattt	gccttcgatt	tccgtggccg	ctgcttcata	420
gtccccactt	aggaacttac	catattgagt	actatgtcta	tttcatctgc	tccatcgctt	480
acggccagtg	cgtttcggcc	aacttaactt	cgataaagct	ctgtgaagcg	gggaaacagc	540
actgacgctg	gccactttca	cgttttcggc	tgtgagcggt	tctctcacgt	ggagacgaag	600
ttgggggtata	cgcagatcgc	cgctacggat	ggaatcgggg	atctgtgtcc	tcgaagtcat	660
tgacgctctc	ggtaaacttt	gtgatgactc	ctccgaatcc	gtggcgttca	gggcntggtc	720
agatcgatga	cgccagcagg	aattttcttcg	tttcgggagt	gtcgaatcgt	gaatagtgat	780
cccgattatt	tgatcggttt	tcagtaaaat	tctctcttct	gactcggccg	gatgaactga	840
gcgaaggcca	tttcgtattt	atttgcgtgc	attgttgtgt	agttcggtatt	ttgttgatgt	900
ctttctttgt	ctctaacggt	t				921

(2) INFORMATION FOR SEQ ID NO:1284

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 604 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: circular

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: UNKNOWN

(vi) ORIGINAL SOURCE:

- (A) ORGANISM: PORYPHYROMONAS GINGIVALIS

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION 1...604

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1284

aggaagatat	ccgagcaatt	tcgatgccaa	ctcaaagggg	agcagcgagt	gactaccaga	60
tcatcatcac	gacagaagtg	cttgccggagg	gtatcaacta	caccgtgcc	acagcatact	120
caactacgat	actccatgga	atgctaccgc	ctgatgcaac	gcacggggcg	agtcaaccgc	180
atcggtctcc	aagctcctgc	gtctatgtct	ataacttcat	gccgagtga	gagggagatg	240
ccgagtcaat	ctcgtcaaga	aagcatatac	caagctacag	tctttocaca	cactttcggt	300
gaggatagtc	aaatcttcag	tgaagaagaa	gaggttgtag	acccgagctg	aaaaccaga	360
tcgagggcgc	ggagtctgcc	ctagagcaat	actctacgag	ctcaaaacct	acaaggcgca	420
gcatccagaa	cgatacgact	aatcgctcgg	cagagcggaag	ggctagagtt	ggctgtatct	480
gagacagagg	gcaagctctc	ttcgtcgtcc	gcagccccaa	gtgccctgcg	atgttcgttg	540
ctatgatgcc	ctagaggata	agtgccttat	gctctctgcc	ccacagatta	cgaggctttc	600
cgct						604